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THE BEHAVIOR OF THE TESTIS UNDER VARYING EXPERIMENTAL CONDITIONS AND THE FUNCTION OF THE SCROTUM; TRANSPLANTATION, CRYPTORCHIDISM, VASECTOMY*†

CARL R. MOORE, Ph.D.
Chicago

In the department of Zoology at the University of Chicago we have been engaged for the past six or seven years on a relatively intensive program of sex research. This has been to a large extent an outgrowth of the beautiful work of Prof. F. R. Lillie, chairman of the department, who demonstrated that fetal hormones have a remarkable capacity of influencing the sexual development of a growing fetus. This work, done on the developing twins of cattle, showed that a male-female combination resulted in the male delivering certain substances that not only prevents the proper development of the reproductive system of the female but even influences its development in a remarkable manner towards the male type. Our procedures have been directed toward an analysis of the primary question of sex and my own part of it has been directed to a biological study of the sex glands. Today I shall touch upon but one of the many sides of the work—namely some of the biological aspects of the mammalian testis. Presented largely from the biological aspect I will purposely leave to you for the most part the clinical applications that underlie and run through the work.

TESTIS GRAFTS

Probably the best known work in this field comes from the laboratories of Steinach in Vienna,

†From the Hull Zoological Laboratories, the University of Chicago.

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Sand at Copenhagen, and Lipschutz at Dorpat. Briefly, the typical testis graft—a whole or a part of a testis transplanted from one individual to another and recovered some months later—is somewhat different from normal testis tissue (Fig. 1). The seminiferous tubules are characteristically devoid of a germinal epithelium and though well outlined, but considerably smaller in diameter than normal tubules, contain but a single layer of cells next the basement membrane; these cells are ordinarily thought to be sertoli cells. The seminiferous tubules, unlike those of normal testes, are widely separated from each other, the intervals being packed with interstitial tissue. It is the latter tissue that is usually considered to be the internal secretory tissue of the gland.

Personally I have obtained many grafts from the rat and guinea-pig transplantations resembling

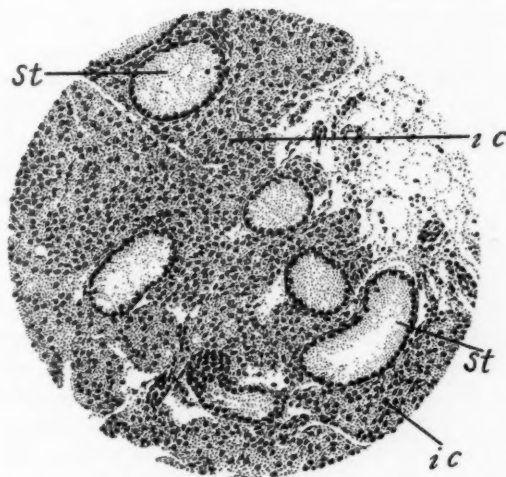


Fig. 1. Part of cross section of testis graft from female guinea-pig, seven months after transplantation, *ic*, interstitial tissue; *st*, degenerate seminiferous tubule.

this grade of graft but it has been the unusual type that has been of most importance from the fact that it presents conditions to be accounted for and has thus stimulated further work.

It should be mentioned that testis grafts have

been recovered from transplantations into normal males, castrated males, normal females, spayed females, and females that have given birth to normal litters of young while carrying the testis graft; these have been recovered from thirty days to approximately one year after transplantation. It is perhaps known to many of you that a considerable amount of Steinach's work and theories postulate an antagonism between the sex hormones derived from the ovary and testis. He has emphatically stated many times that this antagonism is of such a nature that one sex gland will not grow or persist in the presence of the other. My own work is in entire disagreement with this idea and I have produced artificial hermaphrodites, experimentally, so that a functional female would carry a testis graft or a functional male carry an ovarian graft that was actively maturing new follicles. It is also known that human material presents occasionally a fair degree of typical hermaphroditic glands that have persisted for long periods of time.

But this unusual type of graft I have obtained demands our attention. Instead of degenerate, quiescent seminiferous tubules and a great interstitial cell hypertrophy, some of them have contained seminiferous tubules in an active stage of spermatogenesis with normal amounts of interstitial tissue (Fig. 2). The sex cells have continued to multiply, building up an epithelium of two to three cells in thickness, but the innermost cells fail to adhere to those being produced underneath, and become loosened from the epithelium, escape into the lumen of the tubules, and degenerate. It is a curious fact that out of the hundreds and literally thousands of testis grafts that have been studied from mammals no one has ever found a graft in which complete germ cell differentiation has taken place, whether the graft was made subcutaneously, intra-muscularly or intra-peritoneally. It has been a problem since the first graft was studied to account for the complete absence of spermatozoa; active multiplication of these germinal cells goes on but none ever reach the final stage of the flagellate spermatozoon. One of our problems has been to determine why it is so.

Our first step in advance in obtaining real information on this question came through a study of experimental cryptorchidism. It is common knowledge that man and many other mammals (pig, horse, sheep, etc.) occasionally experience a

retention of one or both testes in the abdominal cavity; one in 500 military recruits according to Dr. Bevan of Chicago. One or both testes fail to descend into the scrotum through the inguinal canal and since hidden from view are known as "cryptorchid testes." Many such have been described and they are invariably abnormal and functionless so far as sperm production is concerned; doubly cryptorchid men or animals are sterile. The seminiferous tubules are without an epithelium similar to the ordinary testis graft.

It has usually been assumed that the condition of these undescended testes was due to an improper embryological formation but that this is wrong I will show unmistakably.

The guinea-pig, rat, rabbit, and some other mammals retain throughout life a wide open connection between the scrotum and the peritoneal cavity, and the testes may be elevated through the

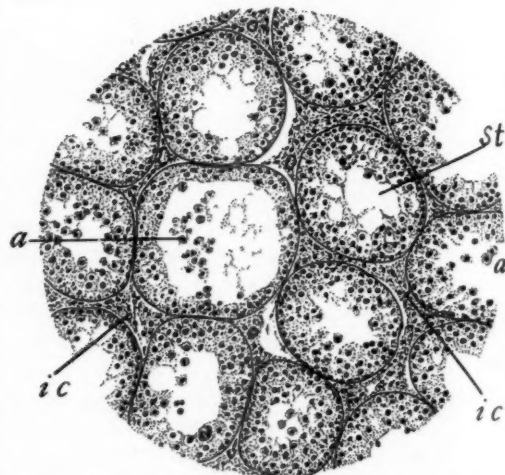


Fig. 2. Part of section of testis graft from female guinea-pig nine months after transplantation. *a*, cells of germinal epithelium free in tubular lumen; *ic*, interstitial tissue; *st*, seminiferous tubule with many cells in germinal epithelium.

open inguinal canals into the abdominal cavity, to redescend into the scrotum on relaxation of the controlling muscles. Under these conditions the testes are normal. If, however, the testes are pushed through the open inguinal canals into the peritoneal cavity and are prevented from returning to the scrotum a very rapid and striking, progressive degeneration of the generative portion follows. Forceful retention may be accomplished by several slightly different means, i. e., by severing the mesenteric connection between the epididymis

and the bottom of the scrotum and turning the testis back into the peritoneal cavity; by pushing the testis through the canals and tying the scrotum, or sewing shut the inguinal canals, etc. Under such conditions the blood supply, nerve connections and vas deferens are normal. More certainly will the testis be retained in the abdomen if the inguinal canals are closed with a purse string suture, but in approximately 50 per cent of the cases in the guinea-pig the testes do not redescend into the scrotum when the canals remain open, even though the testes are not fastened by sutures.

It makes little difference what means are taken to insure abdominal retention of the elevated testis, the results are the same if the organ does not sag into the inguinal canal. The germinal epithelium of a normal active testis retained for the short period of seven days in the abdomen will be found to be totally disorganized. The usually well defined tubular lumen will be practically filled with a mass of free cells thrown out from the epithelium; many cells may appear approximately normal but the majority are in a stage of degeneration. Some of the cells can be defined in outline only, others show fragmentation of the nucleus, and chromatin materials scattered throughout the cell or protoplasmic masses may be located in a granular debris, the result of more extensive degeneration. The former compact epithelium is little in evidence, its place having been taken by a fibrillar reticulum filled with vacuoles or spaces from which the cells have escaped or in which they have undergone fragmentation and dissolution, with or without the complete removal of the fragmented remains. Very often large multinuclear protoplasmic masses—typical "giant cell" like masses—are to be found either in the epithelial position or loose in the lumen. All stages in the formation of these multinucleate masses can be followed and they are seen to owe their origin to the coalescence of contiguous germinal cells; the cell walls disappear and the epithelium reminds one of the proverbial melting pot in which discrete cells are merged into a common protoplasmic mass.

By fourteen days peritoneal retention the majority of the degenerating debris has been removed from the tubules through liquefaction and transportation and but few cells can be seen; these are almost without exception in a degenerate condition. By twenty days little else remains in the tu-

bules, aside from the reticulum, than the Sertoli cells situated against the inner border of the basement membrane, and a few spermatogonia. We have, therefore, produced experimentally, within twenty days, a typical cryptorchid testis such as occurs in nature.

So long as the testis remains in the peritoneal cavity it is degenerate. (See Fig. 3.) Followed at brief intervals from seven days to more than a year after operation, the testes are found to progressively decrease in size; tubules shrink to one-third their original diameter and interstitial cells become more prominent and are collected in masses between the now more widely separated tubules. If by chance the testis returns to the scrotum after being elevated into the peritoneal cavity it may be found a few months later in a normal condition. If descent has been only partial, and the testis is held by adhesions from taking its normal scrotal position, then the testis may be in part normal, part degenerate. In general it may be stated that the more nearly a testis returns to its normal scrotal position the more nearly normal will be the seminiferous tubule epithelium.

To test the powers of recuperation of a testis after degeneration, both testes of an animal were elevated to the peritoneal cavity and so retained for

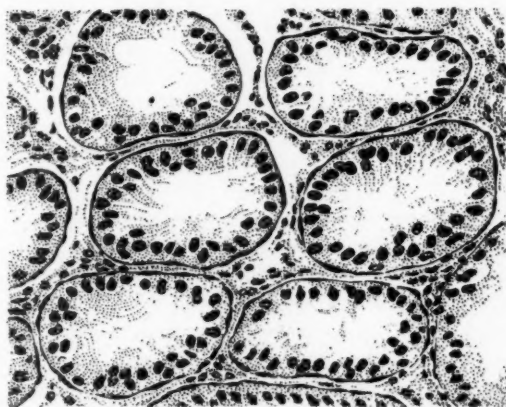


Fig. 3. Seminiferous tubules from testis of adult sheep retained in abdominal cavity for 76 days. Germinal epithelium has been removed and Sertoli cells remain in the tubules.

twenty-four days. By a second operation one testis was replaced in the scrotum, the opposite one removed and studied histologically to ascertain the stage of degeneration of the one in the scrotum. The seminiferous tubules, at the end of twenty-four days are empty of all degenerating re-

mains, and Sertoli cells with a small number of spermatogonia formed a single layer of cells against the walls of the basement membrane.

It can be realized, therefore, that the testis replaced in the scrotum, after its twenty-four days retention in the abdomen, was in a highly degenerate condition. It was allowed to remain in the scrotum for two and a half months when the animal was killed and the testis prepared for histological study. The replaced testis had almost completely recovered from its degenerate condition. The majority of the tubules contained a well established epithelium and in many of them spermatozoa had again appeared. A few tubules were in stages of partial recovery but some were entirely devoid of an epithelium. In the latter case it is questionable if recovery would have ever taken place and there is little doubt that all cells capable of further division were destroyed during the peritoneal confinement. The few totally degenerate tubules were located indiscriminately among normal tubules and not segregated off into any particular locality, thus showing that recovery has no definite relation to particular local conditions within the gonad but depends upon the presence of cells capable of further division at the time of scrotal replacement.

It follows, therefore, that the scrotum exerts a peculiarly striking influence upon the testis and an influence that is necessary not only for the complete differentiation of germ cells but even for the retention of cells previously differentiated. Removed from the scrotum, or from conditions simulating those of the scrotum, a testis is rapidly deprived of its germinal epithelium.

Is this not a partial solution for the absence of normal tubules containing spermatozoa in testis grafts? With a realization that the testis-scrotal relationship was necessary for the production of spermatozoa I transplanted testes into the scrotum by sewing them to the walls of the tunica vaginalis. Though the tunica vaginalis would seem a rather poor place for the development of the necessary vascularity for a graft to persist, nevertheless the transplantations were successful and grafts have been recovered six months after transplantation that contained normal seminiferous tubules with typical spermatozoa. Thus for the first time have testis grafts from mammals been obtained that contained normal seminiferous tubules. We have additional evidence in this result that the scrotum is

necessary for germ cell differentiation in those mammals that normally possess a scrotum.

THE STEINACH OPERATION

Looking at the problem of the biology of the sex gland from another angle the popularly known and, if you will pardon an academic opinion, the too frequently practiced Steinach operation has come in for considerable attention in our laboratory. This problem of vasectomy or vasotomy has been a battleground of opinions for more than fifty years. It involves the effect upon the testis of occluding the vas or ductus deferens, the outlet duct of the testis. Opinions have been about equally divided that such an operation causes the generative part of the testis to atrophy and the supposed internal secretory part to undergo an increase, and that it leaves the testis normal. The French writers, Bouin and Ancel, who are really the founders of the conception that testicular hormones are the products of the interstitial cells, gave this problem its initial impetus, and following the recent work of Steinach the debatable condition has in the last few years been elevated to the position of one of the twentieth century miracles. It is at once a means to rejuvenate a worn-out organism and restore its youthful qualities, to enhance a pugnacious temperament, cure failing eyesight, headaches, heart-failure, and regulate blood pressure—truly a phenomenal series of results from such a simple procedure as the ligation of the ex-current duct of the sex gland.

Let me make my position clear that clinical symptoms have played no part in my results, since it is sometimes difficult to adequately determine the feelings of a rat or guinea-pig. It is also too well known that with a certain class of people in the proper mental conditions the mere acquaintance with the mysteries of an ether anesthesia works wonders untold. My own interests in the problem have been purely biologic and my first operations in 1919 were done to study the testis reactions and not to disprove the contentions of other workers.

The previously described results, and the philosophy accompanying the same, in brief, is that occlusion of the ductus deferens causes a rapid degeneration of the germinal epithelium accompanied by an increased amount of interstitial cells. These interstitial cells are therefore supposed to furnish an overabundance of internal secretions or

hormones, and these substances are the effective and sought-after results of the operation. This reaction is the only morphological evidence upon which the end results are based and upon the behavior of the tissue must stand or fall the value of the operation.

I could dismiss the results with a word were it not essential to attempt to harmonize the very divergent results obtained after the operation, and to attempt an explanation of the primary misconception.

I have performed the experiment on rats, guinea-pigs, rabbits and sheep and the results are consistent in showing that the operation leaves the testis in a normal, functional condition, actively producing germ cells, provided that it retains its normal position in the scrotum. Since the rabbit has been used to a great extent for such operations let me review, very briefly, the series of experiments brought to a close late in the past summer. It has been maintained that degeneration in the testis after vas deferens occlusion occurs from two to three weeks after operation.

Mr. Quick and I did twenty operations and studied the testes carefully at two weeks, one, two, three, four, five, and six months later. We found that the generative portion shows absolutely no reaction to the operation but the testis continues to produce germ cells. Not in a single case in all my vasectomy operations, on any of the four groups of animals, has there ever occurred an interstitial cell hypertrophy. And kindly remember, please, that it was only on the basis of such an hypertrophy that the idea was ever conceived. In the rabbit six months after vasectomy the testes have been found to be actively producing germ cells. In fact the intensity with which this proceeds even causes the epididymis to increase in size in order to accommodate the testis products.

Is it possible, from what we now know, to account for these findings of Bouin and Ancel, Steinach, Sand, and others?

I believe that many of the positive findings, for instance the degeneration which took place in the testis after vas ligation, can be explained on the basis of an abnormal testis-scrotal relationship. Following the operation on animals with open inguinal canals adhesions often cause the testis to be partially or completely drawn into the abdomen. Dr. Oslund, working in our laboratory on rats and guinea-pigs, performed something like 75 opera-

tions very diversified as to the time the testes were allowed to remain in the animal after operation. Many of these testes were degenerate, but in every case this degeneration was correlated with an abnormal relationship of the testis to the scrotum. If this organ is displaced towards the abdominal cavity we can only expect degeneration—but this is not caused by the vas deferens having been occluded.

In an adult rabbit I purposely displaced one testis and fastened it in an abnormal position with relation to the scrotum but left the vas deferens alone, whereas its partner remained normal with relation to the scrotum but had the vas deferens ligated and cut in two parts between ligatures. After two weeks the vasectomized testis was perfectly normal but the displaced one was highly degenerate; it must be remembered that in this instance, where the vas deferens was normal, degeneration was marked. This shows the misleading possibilities had the vas deferens in both cases been ligated.

When the epididymis, located for the most part at the bottom of the scrotal sac, increases so greatly in size after vas ligation, it pushes the testis upward into the inguinal canal or indeed through the canal into the abdomen. We have obtained degeneration in such cases, as is to be expected, but again it is not due to vas occlusion.

May I emphasize, therefore, that on the most carefully conducted type of operation, I can find no biological justification for the ideas underlying the Steinach operation.

Here again, however, we have re-emphasized the importance of the normal testis-scrotal relationship. A testis displaced from the scrotal influence rapidly undergoes degeneration, whereas its partner residing in its normal position remains healthy and active. What is this mysterious relationship that exists between testis and scrotum?

A few years ago I set about to attempt an answer to this question, and eliminated by experiment every possibility occurring to me but one and stated in 1922 that it appeared to be a temperature factor—a differential temperature between the body and scrotum. While working upon experiments to prove or disprove the hypothesis I came across a paper from the laboratories at the University of Edinburgh by F. A. E. Crew, who offered the suggestion on purely hypothetical grounds that a differential body temperature might account

for the structural condition of undescended testes.

Now if it is a differential temperature factor that is the underlying cause of degeneration several corollaries should follow. In the first place the temperature within the scrotum should be lower than that within the abdomen, and in such a case it would be recognized that the scrotum was a local temperature regulator for the testes. Then, could we prevent the scrotum from functioning in this regulatory capacity, the testes should show degeneration without displacement from the scrotum. This latter possibility was tested first.

SCROTAL INSULATION

With the cooperation of Dr. Oslund, the scrotum of a ram was insulated against loss of heat by securely, though loosely, encasing it in woolen materials and a water-proof covering, sewed to fit the scrotal contour, and suspended sufficiently by arti-

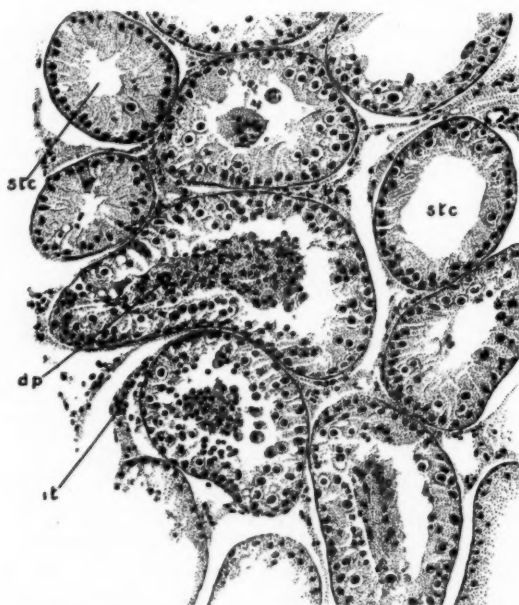


Fig. 4. Portion of testis of adult sheep 80 days after scrotal insulation (no other operation). *dp*, tubule in stage of degeneration with debris of former germinal epithelium in lumen; *it*, interstitial tissue; *stc*, seminiferous tubules devoid of germinal epithelium.

ficial supports as to preclude binding the scrotum or producing abnormal pressure. Within eighty days the testes were found to be devoid of spermatozoa; many tubules were in advanced stages of degeneration, the tubules being filled with loosened, degenerating cells similar to peritoneally

retained testes, while many tubules lacked entirely the germinal epithelium (Fig. 4). *The animal had sterilized itself with its own body heat due to prevention of the local thermo-regulatory function of the scrotum.*

SCROTAL TEMPERATURE AND BODY TEMPERATURE

With Mr. W. J. Quick, temperature readings were made with ordinary thermometers passed into the abdomen through locally anesthetized abdominal regions of rats, rabbits, and guinea-pigs. One thermometer bulb in the peritoneal cavity and another passed through the open inguinal canal into the scrotum, alongside the testis, showed us that at the same moment the scrotal temperature was appreciably lower than that in the peritoneal cavity in all cases. The differences between the two cavities varied as the external environmental temperature varied (Figs. 5 and 6). Thus in a white rat observed in a room temperature of 16° C. the scrotal temperature was 8° C. lower than that of the peritoneal cavity. This gives absolute proof, therefore, that the normal environmental temperature of the testes is appreciably lower than the general body temperature.

There remained for disposal one further assumption to provide actual proof of the correctness of our working hypothesis, namely, the testis should undergo degeneration following the application of temperatures slightly higher than those normal for it.

EFFECTS OF HEAT

It was found that hot water pads applied to the external surface of the guinea-pig scrotum, raising the temperature approximately 6° to 7° C. above normal body temperature for a period of fifteen minutes resulted in severe tubular degeneration within ten days after application. Increasing or decreasing either the length of application or the degree of temperature applied we can produce at will any stage of degeneration desired from the destruction of a few peripheral tubules to complete degeneration of all seminiferous tubules in the testis. Direct submergence of the testis in a controlled saline bath of 47° C. for five minutes is sufficient to produce complete degeneration of every tubule of a guinea-pig testis within five days after the application. Thus the application of slightly higher than its normal temperature is shown to be fatal to the generative portion of the testis and the degeneration following such an application is very

Fig. 4. Portion of testis of adult sheep 80 days after scrotal insulation (no other operation). *dp*, tubule in stage of degeneration with debris of former germinal epithelium in lumen; *it*, interstitial tissue; *stc*, seminiferous tubules devoid of germinal epithelium.

similar to the type occurring after testis elevation into the peritoneal cavity.

The totally independent work of Fukui, a Japanese investigator, but recently published, arrives

the accumulated evidence there should no longer be any doubt that our conception of the effects of the body temperature on the testis condition is the correct one.

Let us examine briefly, then, the qualifications of the scrotum as a local thermo-regulator for the testes. In its simple form in the rodent the scrotal sac is but an outpouching of the peritoneal cavity posteriorly underneath an area of skin much thinner than ordinary skin, and well provided with sweat glands; the muscular layers are exceedingly

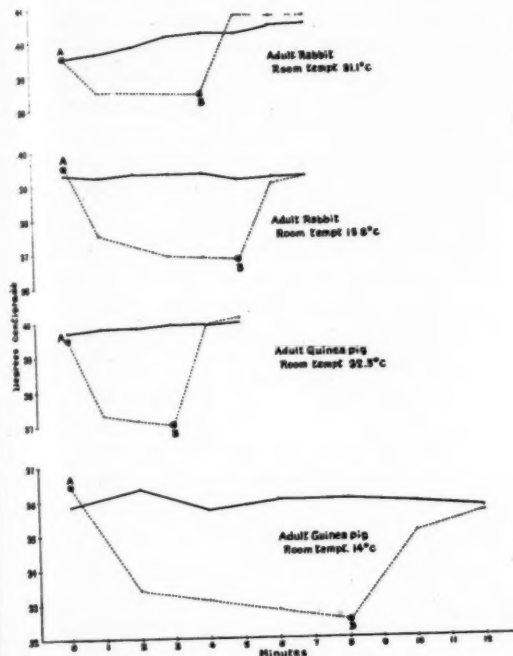


Fig. 5. Graphs showing temperature of abdominal cavity in comparison with temperature of scrotum in the rabbit and guinea-pig, at different room temperatures. In each case (Fig. 6 also) the abdominal cavity temperature is indicated by a solid line. At point A, one thermometer pushed into scrotum alongside testis; decline in temperature indicated by dotted line. At point B, scrotal thermometer retracted into abdomen; temperature curve ascends.

at a similar interpretation with respect to the effects of temperature on the testis and the explanation of degeneration of testes elevated into the body cavity. Applying heat in the form of hot water, hot air, heat of the sun, and arc light heat, Fukui has worked out a so-called "heat curve" of the testis in relation to time of application and degree of temperature employed. A very striking observation, however, and one that greatly strengthens our proof of degenerate testes when elevated into the body cavity was made as follows: Fukui elevated both testes of an animal into the peritoneal cavity but artificially cooled the external area on one side in the region of the elevated testis. He found that in the course of a few days the testis in the artificially cooled area was normal, whereas the uncooled testis was highly degenerate. Thus with all

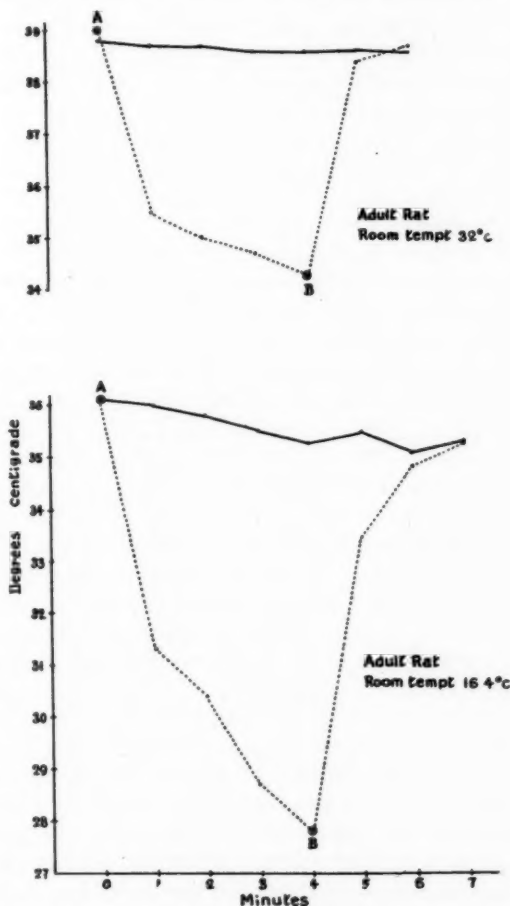


Fig. 6. Graphs showing abdominal cavity temperature in comparison with scrotal temperature in the white rat, at different room temperatures. Procedures and temperature changes indicated as in Fig. 5.

thin; subcutaneous fat is absent, and the organ varies in size and shape as environmental temperatures vary. Thus on hot days the scrotum relaxes to its full pendent condition, permitting the testes

to be farther removed from the body, whereas in a cold atmosphere the scrotum is contracted bringing the testes nearer to the body. It is difficult to detect a male from a female rat in low temperatures without close scrutiny, as the testes may be so elevated on scrotal contraction that their position is in reality abdominal; on hot days, however, the testes protrude considerably in a post-anal position. A similar adjustment follows also for man.

The physical and physiological principles of a local temperature regulator are inherent in the mechanism, and in consideration of all proofs brought forward I have no hesitancy in stating that *the scrotum of mammals is now to be considered a local thermo-regulator for the testes and that the regulatory or functional capacities are indispensable for the production of differentiated germ cells or the maintenance of those already produced*. Not longer than three years ago Cunningham, in his book, *Hormones and Heredity*, stated that "Various causes have been suggested for the formation of the scrotum, but no one has ever been able to suggest a use for it" (page 147). I believe we have not only been able to suggest a use for it but have proved its function and utility.

Objections may be raised against the idea, however, due first to the lack of such a structure in the bird, where the testes are abdominal and the body temperatures even higher than that of the mammal; and second to the lack of it in some mammals (monotremes, elephant, many aquatic forms, bats, etc.). In regard to the first objection may I not state that the bird and mammal are two entirely different animals. Many structural and physico-chemical differences exist between these two forms. Because the testicular tissue is a decidedly heat labile substance in one is no good reason for assuming it in the other; slight physico-chemical differences may produce an entirely different reaction system, and we need not be troubled by such physiological differences, particularly when we appreciate the many structural differences between the two animals. As regards the mammal it need only be mentioned that most biologists now assume that an evolution of animal forms has occurred within the class mammalia as well as among vertebrates as a whole, or invertebrates. In the monotremes, the lower reptile-like mammals in which it is said body temperatures are by no means constant but are subject to wide variations, the testes are

located in the reptilian position, namely, just posterior to the kidneys in the abdomen. As we ascend the scale of mammals a typical scrotum is gradually produced. In some mammals (bat, sloth, etc.) the testes have descended into the pelvic region and have taken up a position against the anterior abdominal wall in a pouch-like depression over which the skin is very thin. It is unquestioned that sufficient temperature adjustment is thus obtained, else we would not have such animals preserved for our edification. In rodents an onward step has been made; the testes protrude into the outpouching of the peritoneum in the inguinal region but the final scrotal condition has not yet been accomplished, as the sacs present a wide open connection capable of permitting passage of the testis into and out of the abdomen. The final closed scrotum is only gained in the higher mammals. It should not trouble us exceedingly that variations have occurred during its evolution—adaptations perhaps—for such have been present even in the evolution of such typical structures as appendages.

We may therefore assume a gradual evolution of a scrotum within the mammal group and may we not, with all justice, consider that perhaps the evolution of the entire mammalian group may have been more or less dependent upon this scrotal evolution? It involves certainly the capacity of the reproductive system to function and therefore the very foundation of the race.

In this general conception, therefore, we have brought together under one fundamental principle an explanation of the behavior of the testis in transplantation, an explanation of the condition of the cryptorchid testis, and I believe we have some insight into the divergent results and misconceptions of vasectomy, and finally the establishment, for the first time, of a proper conception of what has been heretofore considered an apparently useless and even detrimental structure—the scrotum. The established general physiological principles of the testis gives us not only a foothold in the upward climb into an understanding of the biology of this sex gland but it also brings to light some facts that may modify previous surgical procedures.

DISCUSSION

DR. F. C. RONDA (Minneapolis): I would like to ask in regard to the use of heliotherapy, in exposing the patient to the sun's rays, in which there might be a very consider-

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able elevation of temperature, would there be any element of danger?

DR. CARL R. MOORE (Chicago): The only way I can answer that is to cite a case of the human testis examined after the application of heat. I believe that melted paraffin has been used by some to reduce inflammations in cases where epididymitis has occurred. One case has been cited where examination showed that the testicle had degenerated; there are always possibilities of a recovery if degeneration is not too severe. Bearing on the same situation, when the testicle is elevated into the abdomen, we know it can almost completely degenerate and still come back to normal. There is nothing to make us believe that the sensitivity of the guinea-pig testis to heat is of the same order as that in the case of the human. It may be possible that the human testis will stand more heat without degeneration; we do not know. But there is not a question of doubt in my mind that extraneous application of heat for too long a time, or for a shorter time and a higher degree of heat, will produce exactly the same type of degeneration in the case of the human testis.

DR. C. N. HENSEL (St. Paul): What about the question of leaving the undescended testicle in the abdominal cavity or in place in the scrotum?

DR. MOORE: Personally, I have had no experience in this matter, but Dr. Bevan I believe has discussed the question (see Surg. Clin., Chicago, 1918, p. 1101-1117). He reports operations on approximately five hundred cases of return of the testes to the scrotum. Of course up to that time the possibilities of recovery were not known. It was not clearly understood that the displacement was the condition which caused the degeneration, and therefore the recovery of this has not been followed excepting in a few cases. Dr. Bevan stated to me personally that he was very certain that re-establishment of the functional activity on return to the scrotum had followed in cases in which the individuals were very young. We do not know how long it may remain in this abnormal position and still be able to return to its functional condition. Dr. Bevan I think under ordinary conditions advises return. He himself has done a great many operations of that character.

THE CHAIRMAN: We are greatly indebted to Dr. Moore for coming this long distance and giving us this very excellent review of his work. It is this sort of thing that we need and we are carrying home something from this meeting with which to meet a good many of the questions that concern many folks, even those who do not reside in Minnesota.

VITAMIN CONTENT OF COD LIVER OIL HIGH

A teaspoonful of cod liver oil contains as much of the fat soluble vitamin as a pound of the best butter, says *Hygeia*, popular health magazine published by the American Medical Association.

That is the reason why cod liver oil is given babies that have a tendency to rickets. As far as calories are concerned, cod liver oil has about the same value as other pure fats, but its vitamin content is far greater than the same quantity of butter, cream or other fatty articles of diet.

THE DIAGNOSIS AND TREATMENT OF NEPHRITIS IN CHILDREN*

F. W. SCHLUTZ, M.D.

Professor of Pediatrics, University of Minnesota
Minneapolis

Nephritis in infancy and childhood differs decidedly and in many ways from that occurring in the adult.

The youth and vigor of its tissues is in the child's favor in this condition as compared with the adult. Its cardiovascular system is generally in good order and has not been hopelessly weakened or damaged by abnormal influences as is so commonly the case in the adult. If the blood pressure does rise, it has little or no effect on the vascular system of the child. Fundamental differences like these, depending largely on the age of the organism, determine to a great extent the types commonly observed and also the prognosis of the condition—the latter always favorable in the child, but quite the other way in the adult.

The cardio-renal type of nephritis, which is without doubt the most common type observed in the adult, is rarely seen in the child—and again the acute hemorrhagic nephritis so commonly seen in childhood is only seldom seen in the adult.

There are essentially four types of nephritis of childhood which the practitioner will regularly and frequently encounter and which he must learn to recognize and differentiate: two acute types, the acute hemorrhagic nephritis and the acute exudative tubular nephritis or nephrosis type; and two chronic types, the mild so-called "pedo-nephritis" of Heubner and the more severe chronic nephritis with contracted kidney and hypertension. More elaborate classifications are often attempted and suggested, but it will be found that the additional types mentioned or included are really only sub-acute or intermediary stages of one of the four types mentioned above.

Acute hemorrhagic nephritis is the most common form of nephritis seen in infancy and childhood. Practically all observers agree that every type of nephritis depends for its development upon some source of infection. They are surely unanimous upon this point in the case of the acute hemorrhagic type. In my experience, infections in

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and about the throat—such as tonsillitis and acute adenitis, especially of streptococcic origin—are the most frequent and common cause. The acute hemorrhagic nephritis following scarlet fever is a familiar picture in the experience of every practitioner. It is always a streptococcic infection. Severe impetiginous skin infections very easily cause acute hemorrhagic nephritis. One should never fail to look for it as a complication of this condition. Gastro-intestinal diseases are a less frequent cause except in the very young artificially fed infant. Pyelo-cystitis, appendicitis, and infections about the teeth are among the rare causes.

In acute hemorrhagic nephritis the glomeruli of the kidney are the chief seat of inflammation. The principal characteristic of the condition is the bloody urine. The urine contains a moderate amount of albumin, quite a number of pus cells, but very few casts. Ordinarily there is very little or no edema present in the case. The kidney takes care of fluid very well. The urinary secretion is generally adequate. Functional tests of the kidney may show a moderate diminution of kidney functional capacity. There is in this type very little tendency to uremia. The heart and blood pressure are normal. The child really does not seem very ill. The tendency is always to recovery in this type. Fatal outcome in the acute stage is rare. Occasionally a case merges into the chronic form.

The second acute type, the nephrosis or exudative tubular nephritis, presents an entirely different picture.

The seat of the dysfunction is not in the glomeruli, but rather in the tubular portion of the kidney. There is swelling and degeneration of the cells lining the renal tubules. These cells are cast off, appearing in the urine as casts. The permeability of the kidney for proteins of the blood is increased. This causes albumin to appear in the urine. The glomeruli are not in any way involved and there is no formation of interstitial fibrous tissue as in contracted kidney. The changes in the kidney are not permanent. These cases can completely recover.

There is a different train of symptoms in this type from that of the acute hemorrhagic. This type of nephritis is also the result of infection. The infection is focal—often quite obscure, but Marriott and Clausen have shown that it can almost invariably be demonstrated in the nasal accessory sinuses. The staphylococcus is most com-

monly present in the lesions found there. The toxic material originating from these lesions is in the opinion of Marriott and Clausen, the factor responsible for the development of the symptoms in this condition.

The nephritis begins without apparent cause—out of a clear sky while the child seemingly is in good health. There is no temperature and rarely the least evidence of any accompanying disease. The earliest symptom of the disease is edema. Beginning in the legs and then the face or in both places simultaneously, it spreads rapidly to the rest of the body. The edema is very persistent and continually recurs after slight remissions. The amount of edema present is an index of the severity of the case.

In the mild type the urinary output is slightly diminished. Albumin is present. There are a few red and white blood cells and a large number of cellular and granular casts. The heart is normal but there may be slight elevation of blood pressure. Functional tests of the kidney are somewhat diminished. The patient tends to recover from this condition and complete repair of the kidney can take place.

The severe cases present more the picture of adult parenchymatous nephritis. The edema is excessive. There is marked suppression of urine. Often only 2 or 3 ounces of urine are passed during the twenty-four hours. This oliguria often gives way to marked polyuria. There is a great deal of albumin, more blood than in the mild type and large numbers of cellular and granular casts. The blood pressure is generally high. The kidney is unable to excrete salt. This is always true if excessive edema is present. Non-protein nitrogen and urea retention may be high; but generally there is no real retention. The occurrence of uremic symptoms is an ever-present possibility and often does occur; but one must be careful not to mistake an edema of the brain for uremia. The patient may recover entirely without the development of chronic forms of nephritis. This development does, however, not infrequently occur; and the case is much more apt to end fatally at any stage than the acute hemorrhagic form. Marriott and Clausen advance an interesting explanation for the occurrence of the edema. It does not occur because the kidney fails to excrete fluids or salts. They believe that it is the result of change in the permeability of vessels and cells throughout the

body. This permits fluids and salts to pass through vessel walls into cells and serous cavities in an abnormal way. The kidney function may be, and often is, entirely normal and yet fluid is retained in the tissues. Clausen has found constantly present in the blood of the nephrosis type, substances which are capable of changing the surface tension of the blood and the permeability of cells. This substance is excreted in the urine and is produced in the body as a result of infection. Marriott and Clausen believe that this substance is responsible for the changes occurring in the kidney and the development of the edema through its influence on the surface tension of the blood and effect upon the permeability of cells.

Of the two chronic types, the mild type or so-called pedo-nephritis of Heubner is fairly common. Some of the cases occasionally follow the acute hemorrhagic nephritis. Generally they seem to appear from nowhere and without assignable cause. Heubner and most other observers believe, however, that in the chronic types, also, infections play the principal rôle as etiological factors.

The nephritis may last for months or years, with the little patient, except for an anemia, seemingly in good health. There is no edema, hematuria or high blood pressure. All functional tests are practically normal. Casts will be seen only if there are slight acute exacerbations. Most of the cases gradually clear up.

A more severe type, particularly if it follows acute hemorrhagic nephritis, may present the picture of the adult type of chronic diffuse nephritis. There is marked anemia. The skin is pale and waxy. Edema is generally pronounced. The urine is scanty, containing much albumin and many casts and some blood cells. The functional tests show a severely damaged kidney. Uremia is liable to supervene. This type is much more rare than the mild pedo-nephritis. The prognosis is not good.

The second chronic type is the true chronic interstitial nephritis with contracted kidney—a condition similar to the type so common in the adult. It is exceedingly rare in childhood. These cases show polyuria with urine of low specific gravity. There is albumin with few casts. Headache and visual disturbances are common. The blood pressure is high. The heart is enlarged. Albuminuric retinitis is often present. All functional tests are low. The prognosis is always bad. Fortunately,

the condition is exceedingly rare. Symptoms of infantilism are sometimes associated with this type.

There has been much discussion as to the value of the functional tests used in the diagnosis of nephritis. It is safe to say at the outset that they are by no means as valuable or certain in the diagnosis of the nephritis of childhood as they are in that of the adult.

Hill divides kidney function tests into two broad groups: (a) those that measure the power of the kidney to excrete chemical substances not ordinarily contained in the food; (b) those which measure the ability of the kidney to excrete substances ordinarily contained in the food.

The kidney has three important functions. It must excrete nitrogen, salt, and water. The functional tests are based on this fact and are essentially a determination of the rate or volume of such excretion. For practical purposes only four tests need to be considered.

The phenolsulphonphthalein test devised by Rowntree and Geraghty is valuable. It is carried out as follows: From three to six milligrams of dye are injected intramuscularly. All urine passed for two hours is saved. The urine is alkalinized with sodium hydrate and diluted to one thousand cubic centimeters. The intensity of the resulting color is compared with that of a standard solution. The result is expressed in percentage of phthalein excreted in two hours. A normal child should excrete somewhere in the neighborhood of 75 per cent of the injected dye within two hours. An excretion below 60 per cent could be regarded as abnormal function. In the acute nephritis with impaired function the average excretion will run somewhere in the neighborhood of 59 per cent, about 17 per cent under normal; in the chronic nephritis, 63 per cent or about 13 per cent under normal. This test, while probably the best one we have, is nevertheless not always significant in children. Severely damaged kidneys may show almost normal phthalein excretion. A decidedly low percentage of excretion is, of course, always very valuable. It indicates the severity of an acute case and the extent of damage in the chronic case.

The two-hour renal test elaborated by Mosenthal is valuable and can be readily carried out by anyone and anywhere. This test is based on the fact that the kidney expresses its diminished power to functionate by a fixation of its power of concentration. In the damaged kidney the specific grav-

ity of the urine remains fixed for indefinite periods regardless of dietary or other influences. The nitrogen and salt concentration in the urine show hardly any variation. The specific gravity of the urine may be low or high. The technique of the test is very simple. A full diet is given containing a liberal amount of protein, purin extracts and of salt. Hill gives an outline of such a diet.

| <i>Breakfast</i> | <i>Dinner</i> |
|----------------------------------|----------------------------------|
| Cereal—2 tablespoonfuls | Chopped Meat—2 tablespoonfuls |
| Bread—1 slice | 1 Egg |
| Butter— $\frac{1}{2}$ square | 1 Potato |
| Apple Sauce—2 tablespoonfuls | Butter— $1\frac{1}{2}$ cubes |
| Milk—6 ounces | Milk—6 ounces |
| Water—4 ounces | Water—4 ounces |
| Extra Salt—1 gram | Extra Salt—1 gram |
| Caffeine Sodium Benzoate—2 grams | Caffeine Sodium Benzoate—2 grams |

The caffeine is added to produce some diuretic effect on the kidney

The fluid allowance is fixed. No fluid is taken between meals. Two hour specimens of urine are collected, starting with six o'clock in the morning and continuing until six o'clock at night. The night urine is collected from 6 p. m. to 6 a. m. The specific gravity of each two-hourly specimen and of the night urine is taken. A fixation of the specific gravity in all the specimens indicates a loss of power on the part of the kidney to vary the concentration of solids in the urine and indicates impaired kidney function. The nitrogen and salt concentration of each specimen can be quantitated, but it is not necessary except possibly for the night urine. In the normal case there should be a difference of at least eight points between the highest and lowest specific gravity of the different samples. It is likely to run even higher. In the badly damaged kidney there is practically no variation at any period. The simplicity of the test and the ease with which it is applied commend it. In cases with marked edema and oliguria, it does not work well.

Determination of the blood urea nitrogen is a valuable test, particularly in the case threatened with uremia. The disadvantage of the test for the practitioner lies in the fact that it requires technical apparatus and knowledge of laboratory technique which may not be at his command.

Persistent urea nitrogen concentrations of 20 milligrams or over per 100 cubic centimeters of

blood should be regarded as abnormal. Still higher values would in a severe nephritis case give warning of impending uremia.

The added salt and urea test has a limited usefulness in children. It is tedious and difficult to carry out. The patient is put on a constant standard diet containing a known amount of nitrogen, salt, and water. The nitrogen and salt of the urine is quantitated daily until the excretion shows constant values. Two or three days are generally required. On the fourth day 5 grams of salt are added to the diet. For two days the urine is analyzed to determine how long it takes the kidney to excrete the added salt. Then 10 grams of urea are added and the rapidity of excretion of this determined in the same way. The test has only moderate value and is altogether too cumbersome.

Hugh Ashby, in the March, 1923, number of the British Medical Journal, describes a simple urea test which may not be without value. It is based on the fact that a damaged kidney is quite incapable of excreting a urine with a high urea concentration. The technique of the test is as follows: The bladder is emptied at 8 a. m. and immediately afterwards 10 grams of urea are taken in about 3 ounces of water flavored with Tincture of Orange. At 9 a. m. the urine is passed and again at 10 a. m. This specimen is kept for the estimation of urea. The urea is estimated by the hypobromite method. If the percentage of urea after the test exceeds two, the kidneys are fairly efficient; if below two, their condition is unsatisfactory. The test is surely simple and can be carried out by anyone.

In using the functional tests, it is better to use them together rather than singly. To some extent they are complementary. They are particularly valuable in determining the prognosis of a given case. Repeated low functional tests at intervals of a few months would warrant a poor prognosis. On the other hand, high phthalein excretion with fairly normal blood urea and good response to the two-hour renal test would indicate that the process is fairly mild and the damage to the kidney not great. Not any of these functional tests can, of course, compare in value with the careful daily clinical observation of a case.

In the treatment of the nephritides of children, two principles must govern. The kidney must be spared as much as possible, and care must be taken to prevent accumulation of waste products in the blood and tissues.

In the diet just two factors must be considered—the protein and the salt content. These substances pass only through the kidney. If the kidney function is inadequate, the partial or complete retention of these substances or their end products causes trouble. All edema cases show marked salt retention. It is quite obvious that in all cases with this symptom at all pronounced, the diet should be salt-free. If the edema is moderate, a slight restriction of the salt, and the use, for example, of unsalted butter may be enough to meet the requirement. If there is no edema, the diet need not be salt-free.

As a general rule, it is not well to restrict fluid intake. It may be useful in cases with pronounced edema. The acute hemorrhagic type would do badly unless large amounts of fluid were given. It is generally safe to give as much water as the kidney can take care of. Most nephritic children can take as much as 48 ounces of fluid without showing weight gain or edema. If the urinary output approaches approximately two-thirds of the water intake, conditions are satisfactory. Even in severe cases of edema, the amount of fluid given should not be below 10 or 12 ounces per day. This amount must be regarded as a minimum requirement. Purging and sweating are good and useful measures, if not carried to excess.

The policy of keeping the protein intake moderate or low in all nephritis cases is probably safe and good, but not necessary in all types. There can be no question about it, of course, in the case showing retention of these products or with persistently low functional tests. A mistake is probably often made in restricting the protein intake too much. Some observers, notably Epstein, even go so far as to advocate a high protein diet for nephritics. The mere appearance of a large amount of albumin in the urine does not mean that one cannot give protein. Many observers have shown that it has no effect on the albuminuria and that it does not appreciably influence the blood concentration of nitrogenous substances. This is particularly true in the nephrosis type. Hill gives the average protein requirement of a nephritic child as somewhere between 1.5 to 2.0 grams per kilogram body weight per day. Neither protein, carbohydrate, nor fat has any influence on the edema. The diet, therefore, except possibly for a limited protein restriction, can be that of any normal child.

Drugs are not very helpful in the treatment of

nephritis in childhood. Some of them, for example the saline diuretics, may even be harmful.

A notable exception is the use of diuretin in the nephrosis type. Clausen has shown that this drug has a definite effect in altering surface tension. Its favorable influence upon edema is explained by this action and has definitely established it as a valuable procedure in the nephrosis type of case.

Diuretic drugs are always contraindicated if there is much hemorrhage. Digitalis is not necessary, as there is seldom any cardiac complication. Complete rest in bed is essential during any acute stage of the nephritis and absolutely necessary in any case showing edema. The moment the disease is recognized, any possible focal infection should be localized and cleared up if possible. The throat, accessory sinuses and teeth should have the most minute attention and thorough care. Recurrences of infection should particularly be guarded against, as the effect upon the kidney promptly manifests itself in the form of relapse or exacerbation of the nephritis.

The prognosis in the nephritides of childhood is uniformly good. Most cases recover within six or twelve weeks. The kidneys apparently can recover their function entirely. It has been quite definitely shown that an attack of nephritis in childhood does not predispose to the development of this condition in later adult life.

The following is an extract from a pamphlet written by a national lecturer for the Universal Chiropractors' Association and sent recently to our state legislators for their edification. Speaking of hay fever, "We say the reason the nose is subnormal is because the 'power within,' that built the nose and adapts it to all the stimuli from without, *cannot* get the adaptative impulses to the mucous membranes of the nose, because a vertebra in the neck is out of alignment and pressing upon the nerve over which these impulses travel, from the 'power within' to the membranes in the nose. We say the cure is self-evident, and consists of adjusting the offending vertebra to normal alignment, thereby removing the pressure from the nerve and permitting the adaptative impulse to reach the membranes of the nose. We entirely ignore the outside stimuli and the patient gets well.

"Absolutely the same explanation is given for all so-called germ diseases. We say for forty years germs have been accused of causing disease of various kinds, but never in a single instance have they been proven guilty. Forty years is long enough to prove anything true that is true, and the mere fact that scientists and the thinking members of other professions do not accept the germ theory of disease is proof in itself that it isn't correct."

JAMES G. GREGERSON.

THE CUTANEOUS LESIONS OF LATE SYPHILIS*

PAUL A. O'LEARY, M.D.

Section on Dermatology and Syphilology,
Mayo Clinic

Rochester, Minnesota

Under the title of "The cutaneous lesions of late syphilis" I have included for discussion those lesions classified as belonging to the stage in which there is a tendency for the *Spirochete pallida* to become localized in the tissues.

I believe also that it is justifiable to include the lesions of the acute phase of the disease, which at times are found in patients who have had syphilis for many years, the so-called recurrent secondaries or relapsing types.

It is true that the transition from the acute to the late phase of the disease is usually very insidious. However, in certain patients this transition may be determined by the objective signs of the disease, particularly the skin manifestations. It might be said that syphilographers tend no longer to use the terms secondary and tertiary syphilis nor to speak of the stage of the infection in terms of years, but rather to speak of the "early" and "late" manifestations of the disease. The reason for this is, of course, readily understood when we consider that the transition from first to second and second to third stages is so indefinite. It is also unjustifiable to speak of the infectious and noninfectious periods, because *Spirochete pallida* have been demonstrated in the borders of late cutaneous lesions, although in very small numbers and after long search. The terms "early" and "late" syphilis are, however, terms of convenience. If this classification is accepted, it is necessary to add an intermediate type when referring to syphilis of the skin: the precocious or malignant, in which are evidences of both early and late stages. In other words, the cutaneous lesions may show simultaneously characteristics of both early and late cutaneous syphilids; also, lesions usually observed in cases of long standing may appear very shortly after the signs of the acute phase of the disease have subsided.

If we will dismiss from our minds for the time being the cutaneous picture of early syphilis, or

the period of dissemination of the *Spirochete pallida* and visualize the late period or the time at which the *Spirochete pallida* tend to localize in the skin or viscera, the classification of the cutaneous manifestations of late syphilis, as shown in Table I, seems justifiable.

SYPHILITIC LESIONS

If the late lesions of syphilis are regarded as granulomas, and if it is realized that the pathologic process is essentially the same in all of these late lesions, the foregoing classification will appear unnecessary. However, the nomenclature of cutaneous syphilis has been developed as the result of visual pictures rather than as the result of pathologic study; hence a classification is necessary. Various names often designate different phases of the same type of lesions.

The study of the immunology of syphilis has advanced considerably during the last few years so that we now endeavor to explain, in part, the various accidents of the disease on this phenomenon of immunity. In the late stage of the infection, or the period of localization of the *Spirochete pallida*, the organisms are scarce in the blood stream, viscera, and cutaneous lesions, due not only to the influence that has been brought to bear directly on the microorganism, but particularly to the protective reaction that has taken place in the tissues. To this reaction of the tissues the term "allergy" has been applied. It is also by this phenomenon that efforts are made to explain the varied pictures often presented by late, as well as early cutaneous syphilis.

Syphilis is notorious in its tendency to recur, or to light up and reappear while not being treated. At the same time it must be borne in mind that modern treatment has done a great deal to upset the mechanism of immunity, as the inadequately treated patient with acute syphilis is prone to have relapses and recurrences. The unfortunate patient who receives just sufficient treatment to break down the allergic reaction and allow the *Spirochete pallida* to remain disseminated and unrestrained, is likely to develop recurrences or relapses, and perhaps malignant or precocious syphilis. The histopathologic picture of the late syphilids is quite identical in all lesions; it is essentially a granuloma having its origin in the perivascular lymph spaces; it is always interstitial and appears first around blood vessels.

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The recurrent or relapsing lesions.—I may not be entirely justified in including the recurrent or relapsing lesions in a discussion of the late manifestations of the disease, but in view of the fact that theoretically the patient has passed through the stage of dissemination of the organisms when the secondary lesions have involuted, and the allergic phenomenon has been developed only to be shattered by one or several factors, and because of the many therapists who do not interpret the recurrent or relapsing lesions as a result of faulty defensive mechanism, I have included it. The recurrent secondary lesions occur in patients who have not had sufficient treatment during the early infectious period, and in those who have had no treatment, and whose own tissue reaction has been but temporarily developed. There are also certain patients who, in spite of prolonged intensive

ognized mercurial preparation, has been a factor in the production of this complication. The sites of predilection of the recurrent lesions are on the posterior aspect of the scrotum, glans penis, palms, soles, mouth, and the skin (Figs. 1 and 2). The lesions are chiefly of two types: the annular or ring shaped (Fig. 3), and the discrete papular. Depending on their location the papules may undergo maceration and erosion, resulting in the formation of "moist papules". At times there is a tendency for the papules to be grouped or clustered, assuming some of the characteristics of localization observed in the late lesions. The fact that the elementary lesions of this group are essentially papular, although not always necessarily so, and the fact that they tend to localize are evidence of the efforts of the disease to become latent. The *Spirochete pallida* may be easily recognized in

TABLE I

| | | | | |
|---|---|-------------------------------|---|---|
| Manifestations of late syphilis of the skin | | | mucous patches | |
| | | | Mucous membrane—condyloma | |
| | 1. Recurrent | Glabrous skin | papular lesions annular lesions serpiginous lesions | |
| | 2. Early tertiarism | Gummatous | rupial lesions (malignant syphilis) | |
| | 3. Granulomas (classical late syphilis of the skin) | Nodular | agminate—confluent—squamous—cicatricial circinate | |
| | | | serpiginous—squamous—cicatricial— crustaceous—ulcerative | |
| | | Squamous | circumscribed diffuse | |
| | | | Gummatous | diffuse—verrucous—crusted—rupial—ulcerative tuberos—ulcerative—cicatricial |
| | | 4. Syphilis of the appendages | Nails | onychia spade nails |
| | | | Hair | |

(Modified from George Henry Fox)

courses of modern treatment, persist in developing recurrent lesions when treatment is stopped, and there are others in whom efforts to obtain abortive cure early in the course of the disease have failed because of the inefficiency of their resistance factors. I have noted that the extensive use of arsphenamin alone, when not followed with a rec-

these eroded lesions, by dark-field examination; hence they are to be classified as infectious. On the glabrous skin the lesions may appear as isolated grouped papules, annular or ring-shaped crudescences, or large gyrate macular figures without induration or necrosis.

Malignant syphilis.—The term "malignant" or

"precocious" syphilis is applied to those lesions which assume the characteristics of late syphilis, but which develop early in the course of the disease. The term early tertiary stage is perhaps more descriptive. The loss of the allergic reaction,



Fig. 1. "Moist papules" or recurrent lesions on the posterior aspect of the scrotum. Highly infectious.

besides an increase in the virulence or numbers of the *Spirochete pallida*, and possibly a dermatropic type of organism probably explain this phenomenon.

The distribution of the lesions of malignant

syphilis may be similar to that of the acute phase of the disease. The salient features are extensive gummatous ulcerations, resembling late tertiary gumma, with the constitutional symptoms of marked asthenia, loss of weight, and general malaise. Occasionally the ulcerations form large, piled-up crusts, to which the name rupia or oyster-shell crusts have been given.

It is fortunate that this form of syphilis is rare because some of these patients seem to be overwhelmed by a spirochetemia, and do not respond to any form of treatment, progressing to marked weakness and death. The majority of such patients, however, respond encouragingly to modern treatment. This form of the disease is often Wassermann negative, which possibly is also an expression of the lack of resistance displayed by the tissues.

Late syphilids.—The true tertiary syphilid (Table 1) is divided into three main groups: the nodular, squamous, and gummatous, each having individual subdivisions. The term "tuberculous gumma", or "tubero-nodular syphilid", and the various other combinations with the prefix tubero, as suggested by George H. Fox, have been omitted because of their tendency to confuse those not trained in the use of dermatologic terms, and because they are not descriptive.

The late syphilid, in general, presents essentially seven main characteristics. It is not practical to discuss these in the order of frequency, or their individual diagnostic value, because the late lesion presents one or two or all of these characteristics



Fig. 2. Recurrent papules on sole of the foot. Note the arciform tendency the lesions assume at the base of the great toe.

in varying degrees. It should be emphasized that every late lesion does not contain all of these characteristics, nor are they always of the same importance in the same type of lesion; likewise, that the diagnostic value of these pathologic processes depends on the location of the lesion; the type of skin, whether brunette or blond; the racial ten-

portant part in the production of gummatous lesions. This has been proved experimentally. It has also been shown that the *Spirochete pallida* exists in the advancing border of the ulcers, but usually in such limited numbers that its demonstration is very difficult. In malignant syphilis the distribution may be that of a secondary syphilid with the tertiary characteristics.

Configuration.—The borders of the late lesions are arciform or polycyclic segments uniting to form arcs or semicircular plaques. This circular configuration occurs not only in the individual nodule or gumma but in the contour of the grouped lesions and plaques. Arciform, serpiginous, polycyclic, and kidney-shape, are some of the descriptive terms applied to the borders (Fig. 4). This characteristic may be explained by the fact that endarteritis and peri-arteritis are important factors in the pathologic process. It must be borne



Fig. 3. The annular recurrent lesions on the buttock showing particularly the arciform configuration.

dencies, and the associated objective findings and collected data. Practically each of these features may be found alone or in combination in other dermatoses, so that the value of each individual so-called characteristic process must be weighed and interpreted in terms of the entire lesion.

Distribution.—The lesions of late syphilis are usually solitary or few in number. In view of the fact that they appear at a time when localization of the *Spirochete pallida* has taken place, the reason for the development of only a few lesions may be readily understood. They may, however, become very extensive and involve large areas, due to their ability to involute voluntarily and to recur, and also because of the simultaneous healing and extension. There are no classical sites for the appearance of the late lesions although there are areas in which their appearance is most common, as for example, the face, scalp, buttocks, palms, soles, shoulder, knees, and forearm. It has been recognized for some time that trauma plays an im-



Fig. 4. The nodular syphilid showing two of the characteristics: the arciform borders and the induration.

in mind, however, that all annular and round lesions are not syphilitic; they are often noted in other diseases such as the trichophytoses, erythema multiforme, granuloma annulare, and certain types

of epithelioma. The configuration is more distinct at a distance of 6 or 10 feet than close to the lesion.

Induration.—Induration or deep infiltration is a characteristic of practically all the late lesions of

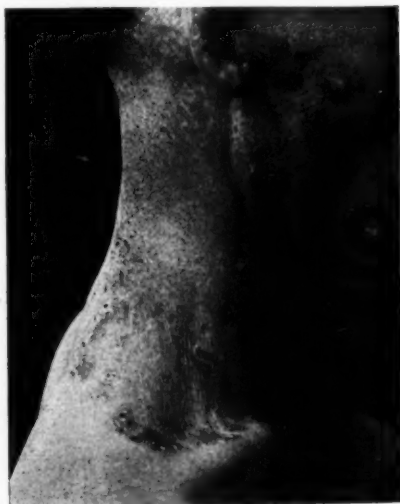


Fig. 5. The superficial atrophic scar of the late syphilid; friable, soft, wrinkled, retaining the configuration of the original lesion.

syphilis. The degree of induration is dependent on the depth of the infiltration, and with experience may readily be differentiated from the induration of other granulomas. Particularly is the element of induration of diagnostic importance in the papular and nodular types of the disease. It has a definite diagnostic importance only when combined with other findings.

Destructiveness.—The late lesions of syphilis are, as a rule, destructive. Although they may not always undergo necrosis, replacement by fibrosis, with the other characteristic changes, is always of diagnostic value. The subcutaneous gummas may ulcerate or involute without destroying the skin. The amount of destruction varies with the depth of the infiltration. It is true also that the amount of scarring is proportionate to the amount of destruction of the deep tissues, although there may be scarring without ulceration of the skin.

Atrophy.—The pathologic process in the more superficial lesions is a loss of the elastica, resulting in atrophy, which is characteristic of the late lesions, and, even when occurring alone, is of considerable diagnostic value (Fig. 5). The scar is

usually of the thin, wrinkled, non-contractile, pliable, tissue-paper type, which retains the configuration of the lesion. In the massive granuloma the scarring may be extensive and deforming, depending on the depth of the involvement and the amount of the invasion of the underlying structures, such as bone and muscle. Superficial scars also result from epithelioma, various forms of cutaneous tuberculosis and superficial burns.

Residual pigmentation.—The peripheral residual pigmentation may persist for a considerable time after the granuloma has completely involuted. The pigmentation also retains the original configuration and the outline of the lesion. Many other dermatoses likewise resolve, leaving a residual pigmentation, particularly lesions in which stasis is a factor, and therefore residual pigmentation in itself is not pathognomonic of tertiary syphilis.



Fig. 6. Classical late syphilid showing the characteristics of the arciform configuration of the advancing border, peripheral extension, scarring, atrophy, and residual pigmentation. The induration does not show in the photograph.

Peripheral extension.—The tendency for the one-sided healing in the gummatous lesions with peripheral or centrifugal extension is common (Fig. 6).

The resulting scar which retains the configuration, pigmentation, and atrophy frequently breaks down and develops recurring granulomas some time after complete healing. The advancing border due to the coalescence of the nodules or ulcerated gumma, or of both, retains the diagnostic arciform configuration. The individual lesion, as well as the group of the lesions, retains this kidney-shaped, arciform, circinate, or polycyclic border.

Individual types of late lesions.—The predominant lesion of late syphilis is the gumma, and, depending on its visual characteristics, it may be roughly classified as nodular, squamous, and ulcerated. Depending on its secondary changes it may be serpiginous, agminate, circinate, rupial, verrucous, or cicatricial, either circumscribed or diffuse.

The nodular type, which is particularly common around the face, buttocks, and thighs, presents the characteristics of one or a few clustered, indurated nodules, with an arciform border, which may ulcerate, or involute without ulceration, resulting in the classical atrophic pigmented patch. This type of lesion must be differentiated from lupus vulgaris, fibroma, lipoma, chafed areas, sebaceous cysts, sarcoids, and rhinoscleromas. The salient features of this type of lesion are the induration and the border previously described, and the color, usually a dark cherry red, shading at the periphery to a brown which, although not pathognomonic, is of diagnostic value.

The serpiginous syphilid is a superficial nodular type of lesion that may or may not ulcerate, but extends peripherally, leaving a thin atrophic scar. The individual nodules desquamate, producing a scale, and at times a crust, if ulceration has occurred. The serpiginous syphilid must be differentiated from lupus vulgaris, psoriasis and epithelioma.

The squamous syphilid, which is most common on the soles and palms (Fig. 7), is at times difficult to distinguish from the common eczema, psoriasis, and trichophytosis of the palm. It is characterized particularly by atrophy, an arciform or circinate border, and tight adherent scales. It may be bilateral although it is usually unilateral. Vesicles, pustules, and pruritus are not found in the squamous syphilid, while atrophy, its most prominent characteristic, is not found in the differential possibilities. The presence of psoriasis elsewhere on the body helps confirm such a diag-

nosis. Also the recognition of mycelium from scrapings is a valuable differential point in the diagnosis of trichophytosis.

The gummatous lesions are not always characterized by ulceration, as this is merely a late phase of the gummatous process. Gumma may be either solitary or multiple, the former being the more difficult to diagnose because fewer diagnostic signs are present in the solitary lesions. As a rule there is very little pain with gummatous lesions, and the adjacent nodes are not affected. The non-ulcerated gumma may involute spontaneously or break down, fluctuate and ulcerate. The resultant necrosis has the characteristic configuration, with crusts growing freely on a dirty ulcer base, and induration, with a tendency to extension and healing at the same time. The gummatous lesions must be differentiated from two other main groups:



Fig. 7. Squamous syphilid of the hands. Note the outline of advancing border, also the atrophy along the index finger.

lesions occurring before ulceration, and those occurring after ulceration. Before ulceration, the differential possibilities are erythema nodosum, furuncles, and lupus vulgaris. After ulceration the possibilities are more numerous and include varicose ulcers, sporotrichosis, traumatic ulcerations, ethyma and scrofuloderma.

Rupial lesions are ulcerated gummas on which the crusts, made up of inspissated pus, have piled up layer on layer until they have taken on the appearance of oyster shells. The crusts persist so long as active ulceration lasts.

Scars.—Scars of late syphilids are diagnosed by the residual atrophy, pigmentation, configuration and the amount of destruction caused. Certain scars, such as those of erythema induratum, burns,

and certain basal cell epitheliomas, are almost indistinguishable, so that it frequently is necessary to look for other evidences of syphilis before reaching a final conclusion.

Leukoderma coli, or residual depigmentation and atrophy around the back and sides of the neck, is a valuable diagnostic finding.

Mucous membranes.—There are essentially four manifestations of late syphilis of the mucous membranes which are worthy of emphasis, the recurrent mucous patches and moist papules, atrophic glossitis, leukoplakia, and nodular and ulcerated gummas. Gummatous involvement of the bony structures of the mouth may result in perforation and necrosis of the mucous membranes.

The recurrent mucous patches may or may not be associated with the cutaneous recurrences. The characteristics are like those of the secondary mucous patches of the mucous membranes. A recurrent papule, because of its environment, becomes eroded and macerated, resulting in a small gray plaque, the borders of which are sharply circumscribed. The surface of these lesions swarm with *Spirochete pallida*.

The late lesions of the mucous membrane of the mouth are like the typical nodular and gummatous lesions of the skin. The tongue, fauces, and nasopharynx are the most common sites. A third type may be included in this group: sclerotic or atrophic lesions. These occur most often on the tip of the tongue in the form of atrophic glossitis, but at times the entire tongue may be atrophic. Interstitial glossitis of the entire tongue is also met with.

Leukoplakia of the mucous membrane is the most common of the late manifestations of syphilis of the mucous membranes (Fig. 8). There is also a type of leukoplakia which is the result of constant irritation and is not associated with syphilis. The syphilitic type is usually associated with atrophic glossitis, and differs clinically in that it is not the smooth, pearly white, glistening plaque of the traumatic type, but tends rather to be striated, of a bluish tint, and likely to be located where there are no sources of irritation, such as snags of teeth, tobacco cuds, and pipe stems. The removal of leukoplakial patches with cautery or radium is warranted not only as a prophylactic against malignant degeneration, which is quite common, but also to prevent the development of more leukoplakia. At the same time the removal of such irri-

tating influences as pipe stems and snags of teeth, is essential. Although nine different types of affections of the nail have been attributed to syphilis, there are really only two that are seen often enough to warrant mention here: the syphilitic onychia, and the spade nail as described by Varney.

Syphilitic onychia and pronychia may affect a few or all of the nails. The onset is insidious, with thickening, increasing brittleness, furrows, and depressions in the body of the nail. The matrix is, as a rule, affected so that the nails are shed from time to time, and are replaced at first by ill-formed nails. Suppuration and ulceration of the surrounding tissue may occur. The absence of pain is characteristic in syphilitic lesions of the nail. Of course, it is necessary to differentiate these lesions from trichophytic diseases, trophic disturbances, and psoriasis.



Fig. 8. Syphilitic leukoplakia with the associated atrophic glossitis.

The alopecia of the scalp of late syphilis is usually the result of a gummatous process that has subsided, leaving a scar that results in the destruction of the hair roots and bulk. Such signs as thinning of the hair are of minor importance.

The average Wassermann reaction in patients with late syphilis is 87 per cent positive; in other words, in the type of disease in which the Wassermann or the Kolmer test is the least necessary the percentage may be the highest. The frequent finding of the so-called Wassermann-fast group in

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cases of late cutaneous syphilis, has been emphasized by Stokes. He reported that 17 per cent of cases of late syphilis eventually became Wassermann-fast cases. Half of these were shown to have evidences of cardiovascular involvement, and 6 per cent invasion of the nervous system.

In a review of the late cutaneous lesions, as observed at the Mayo Clinic, the following types and their frequency are noted: nodular 49 per cent; squamous 10 per cent; gummatous 26 per cent; and miscellaneous 15 per cent. This grouping is based on all the patients with cutaneous syphilis that have been examined at the Clinic. Of all the patients admitted with syphilis, 24 per cent were found to have evidence of cutaneous late syphilis. Weiss and Conrad report that 25 per cent of the syphilitic patients observed at the University of Washington in St. Louis, show evidence of late syphilis.

SUMMARY

The various types of recurrent and late cutaneous syphilis are itemized, and their important characteristics emphasized. These are the types of late syphilis in which the need for confirmatory serologic tests is least because the clinical findings are usually sufficient to warrant a diagnosis. The signs are valuable as aids to the diagnoses of syphilis of the viscera, and so forth, when the Wassermann test has failed to confirm a suspicion, the recognition of the cutaneous evidence of late syphilis clearing up an otherwise embarrassing situation.

BIBLIOGRAPHY

1. Fox, G. H.: The classification and nomenclature of acquired cutaneous syphilis. *Jour. Cutan. Dis.*, 1913, *xxxi*, 224-235.
2. Stokes, J. H., and Busman, G. J.: A clinical study of Wassermann-fast syphilis, with special reference to prognosis and treatment. *Am. Jour. Med. Sc.*, 1920, *clx*, 658-668.
3. Weiss, R. S., and Conrad, A. H.: The incidence of syphilis at the Washington University dispensary and its relationship to economic conditions. *Arch. Dermat. and Syph.*, 1924, *x*, 453-461.

According to a recent opinion rendered by the Attorney-General of Minnesota pharmacists in this state are allowed to fill narcotic prescriptions for physicians licensed to practice in this state only.

CLINICAL OCULAR TUBERCULOSIS*

JOHN F. FULTON, M.D.

St. Paul

I have chosen for my subject Clinical Ocular Tuberculosis, a subject in which I have become intensely interested from a practical standpoint in the last few years. For a long time oculists seemed to be of the opinion that tuberculous infection attacked only the choroid and posterior parts of the eyeball. We now know, however, that all ocular structures may be attacked either by the tubercle bacilli or the toxin produced by the accumulation of these organisms in parts of the body remote from the eye itself.

The clinical pictures of tuberculous diseases of the eye, as they show themselves anteriorly, are now quite familiar to the experienced oculist and it is not my purpose to describe them in detail here. All degrees of ocular pathology due to tuberculous infection are met with from the mildest cases of phlyctenular keratitis and conjunctivitis to keratitis profunda and from slight and quickly disappearing congestion and small hemorrhage of the fundus to massive exudates and rapid destruction of the ocular structures.

The literature of this disease has increased enormously in the past ten years and the success in treating this unfortunate infection I am happy to say has kept pace most satisfactorily with our knowledge of the disease itself. The vast majority of cases of the various forms of ocular tuberculosis is secondary to an infection elsewhere, but that it is sometimes primary in attacking the conjunctiva can no longer be doubted. I am not unmindful, however, of the fact that bodily epithelial coverings are resistant to bacterial infection, so primary tuberculosis of the eye can only take place as a result of trauma.

Our knowledge of the clinical phenomena of ocular tuberculosis has been vastly augmented by experiments recently made by some of the most prominent ophthalmologists, and chief among them Dr. William C. Finnoff, who has demonstrated that every type of ocular tuberculosis met with in the human eye can be reproduced in animals, and that the animals thus infected presented almost the same identical picture as that which we

*Presented before the Northern Minnesota Medical Association, Duluth, August, 1924.

see in the human eye. The most interesting part of the experiment is the fact that the introduction of an emulsion of the virulent tubercle bacilli into the healthy conjunctiva produced no result, but when the conjunctiva was incised or bruised, typical tuberculous conjunctivitis resulted. Thus being able to produce tuberculous lesions in the eyes of the lower animals at will, has added immensely to the accuracy of our study of ocular tuberculosis.

Tuberculous conjunctivitis is not very common, but is met with sufficiently often in our practice to require a more careful study than it has yet received. It is met with in various forms:

1. Ulcers with ragged edges in which may be found the tubercle bacilli.
2. Cockscomb-like granulations closely resembling trachoma.
3. Tumor-like peduncular structures.

Tuberculous conjunctivitis is the most typical illustration of primary tuberculous disease of the eye, as particles of dust with sharp edges or foreign bodies of any kind having on their surface the tubercle bacilli may bring about this form of inflammation and by extension to surrounding structures may produce the same disease in the lacrimal apparatus and other adjacent structures.

Igersheimer contends that tuberculous conjunctivitis is always primary.

Perhaps the most common form of inflammatory disease of the eye to be mistaken for other inflammatory troubles is tuberculous iritis, which is secondary to a primary focus in some other part of the body, usually the lungs. The symptoms of tuberculous iritis are very much the same as other forms of iritis with the addition of the formation of the nodules. They are usually to be found close to the pupil or the ciliary margins. In the early stages they are very small, requiring the aid of the loop to be seen. Only too often "K.P.s" can be found on the posterior parts of the cornea, indicating ciliary involvement; occasionally, they become massed together, presenting the appearance of a yellowish-white tumor. At this stage this form of iritis may be mistaken for gummatous iritis; a negative Wassermann or the failure of the ocular congestion to respond to tuberculin guides us to a correct diagnosis. Associated with this is usually a well-marked circum-corneal ring of congestion. If the case is tuberculous, the congestion is intensified by a small hypodermic injection of tuberculin.

In this way tuberculous iritis is differentiated from the same disease due to other causes.

A most careful study of this form of tuberculous infection was made by Dr. E. B. L. Brown, of Chicago, which he read in the section of Ophthalmology of the American Medical Association at its 56th annual meeting. A splendid review of the literature on the subject up to that date was published with this paper.

Tuberculous keratitis has also become a most interesting study in recent years. This lesion shows itself in the form of nodules, large and small, in the corneal structure, usually complicated by intense vascularity and photophobia. This condition is usually the result of the extension of the disease from the uveal tract, although a number of cases have been reported in which the starting point was trauma. It is in this form of tuberculous disease that we often have the most wonderful results by the careful and prolonged use of small doses of tuberculin. This refers especially to that variety of non-healing abscess and ulcer of the cornea, formerly called scrofulous.

In addition to the already described types of ocular tuberculosis, we meet with disease of the fundus due to systemic tuberculosis. This usually shows itself in a periphlebitis and vasculitis resulting in repeated hemorrhage into the vitreum and retina and also in certain forms of exudative chorio-retinitis. This may occur independently or associated with the different forms of this disease described in this paper.

Von Hippel recently reported a case in which after the disappearance of the deep corneal infiltration and iritis with typical nodules, characteristic pictures of retinal perivascular tuberculosis became visible. Under tuberculin, all the foci healed entirely.

Notwithstanding the enormous number of most favorable reports we find in the pages of ophthalmological literature in regard to the successful treatment of tuberculous eye diseases by tuberculin, we still occasionally meet a "doubting Thomas" who fails to recognize its value, although Fuchs, with whose genius and unerring judgment we are all familiar, declares that he is now able to save eyes that he formerly enucleated, with resulting good vision, by the prolonged use of small doses of tuberculin. Men like Treacher Collins speak in the highest terms of its usefulness. DeSchweinitz reports in his text book the wonderful results in

treating this same class of disease by this very reliable therapeutic agent.

After having observed with careful attention the beneficial effect of tuberculin in a vast number of cases myself, I agree with what Von Hippel declared in one of his early reports that we possess in tuberculin a means which if rightly used will permanently heal sufferers from tuberculosis of the eye.

I also agree with Mr. C. J. Campbell Faill of Bristol in regard to tuberculin, that its use requires knowledge and care and in no department more than in the treatment of tuberculous disease of the eye, but if administered judiciously and skillfully, it can, in a very large number of cases, produce complete and permanent cure. However, in eye lesions, associated with active lung disease, the best results are obtained by sanatorium treatment rather than by tuberculin.

In a recent paper, Goitz sums up by saying that tuberculin is a most valuable agent. The tuberculous lesions improve under its use and cure takes place in the majority of cases. Its principal field of usefulness is when simple therapy fails. It should be used as early in the disease as possible. Dr. E. B. Miller, of Philadelphia, has reported some cases of delayed union following operative procedures which healed promptly under tuberculin treatment after all other remedies had failed.

Drs. Jackson, Magruder and others have called our attention to the distressing asthenopia which is met with in tuberculosis subjects which are greatly relieved by carefully correcting the refractive and muscular deficiency, thus adding much to the comfort of the patients during their convalescence.

A word in regard to the phlyctenular group of eye diseases: the evidence that they are the result of tuberculous infection is overwhelming.

Dr. Wilder, when he was Chairman of the Committee of the Ophthalmological Section of the American Medical Association for the study of the relation of tuberculosis to diseases of the eye, reported that in 51 cases of phlyctenular diseases of cornea and conjunctiva, 47 showed distinct evidence of tuberculosis, either in quiescent or active form. Colmans, in his recent paper, called our attention to x-ray demonstration, that the majority of patients belonging to this group have enlarged broncho-tracheal glands. Weekers and Colmans have pointed out in recent writings that evidence of this is accumulating more and more as we con-

tinue to investigate. In 50 cases recently examined, enlargement of the broncho-tracheal glands was demonstrated.

Through the instrumentality, foresight and energy of Dr. H. Longstreet Taylor, of St. Paul, we have established in our city a Preventorium for the care and treatment of tuberculous children. For a number of years the St. Paul Free Dispensary has been sending its ocular tuberculosis cases to this well-managed institution. Many of these children developed phlyctenular keratitis and conjunctivitis. I have had the opportunity to make a careful study of treating them with and without tuberculin. In those instances where, for some resulting in repeated hemorrhage into the vitreous reason, tuberculin treatment was neglected, the children made little or no improvement as to their eye condition, but with the tuberculin treatment all these symptoms disappeared with marvelous swiftness to the perfect satisfaction of parents, nurses and physicians. Not only did this treatment seem to relieve the eye conditions, but it aided quickly and most satisfactorily in the improvement of their general condition.

Associated with the St. Paul Free Dispensary is a most efficient tuberculosis department conducted by Dr. E. B. Daugherty. All of our tuberculous eye cases are referred to that department and the treatment conducted and applied by Dr. Daugherty. We have the same arrangement now with our new dispensary service directed by the Wilder Charities.

The kind of tuberculin used is not a matter of importance, but it is important for the physician to comprehend the underlying principles of tuberculin therapy together with its limitations. The type of cases and the dosage suitable to each individual case is far more important than the kind of tuberculin used. Tuberculin, therefore, is one of the most useful therapeutic agents that we have at our command when suitably applied and one of the worst and most dangerous in unsuitable cases and unsuitable dosage.

DISCUSSION

W. E. PATTERSON (Minneapolis): Dr. Fulton has selected a very interesting and vitally important subject for his paper. Tuberculosis of the eye is a disease that until recent years has been little understood.

In retrospect, we who are engaged in treatment of eye disease can see where we have failed to recognize this very common form of ocular disease because of our lack of

knowledge of tuberculosis in its incipency, and the many varied forms occurring in its development.

At the present there is a great difference of opinion as regards the presence of primary ocular tuberculosis.

The difficulty which Dr. William H. Finnoff, of Denver, encountered in his experiments on rabbits' eyes in establishing an infection of the external structures of the eye would lead to the supposition that exogenous infection would be very much the exception if it ever does occur, and that intraocular tuberculosis must be of metastatic origin, as it was necessary in every instance to introduce the virulent organisms directly into the tissues to get a lesion. When the organisms were injected into the blood stream, all forms of intraocular lesions that are common to man were seen to develop.

Tuberculosis of the eye occurring in childhood has been insufficiently studied, especially from a histological standpoint. There may be no other evidence of infection and Pirquet's reaction may be negative.

Tuberculosis should always be considered where acute or chronic inflammations, particularly of a recurring type, do not yield readily to treatment and where no other form of infection can be determined, bearing in mind that it is a common cause of keratitis, cyclitis, choroiditis and scleritis.

As yet I have found no explanation for the absence of the Pirquet reaction in many cases of ocular tuberculosis in children, or for the rarity of ocular tuberculosis in the presence of extensive lesions in other parts of the body.

The development of tuberculin therapy, as is in use today, has made it almost specific in the treatment of early tuberculosis and is a real scientific achievement. Hence the need of early diagnosis.

We should always bear in mind that the best results are obtained by starting with the infinitesimal dose of tuberculin and gradually increasing as the patient shows evidence of immunity.

DR. TUOHY (Duluth): As I have listened to this very interesting paper by Dr. Fulton, I am attracted particularly by what he says relative to the influence of tuberculin upon

the lesions which can be so easily watched during the course of treatment and essential changes noted. Tuberculin, in the treatment of general tuberculosis, and notably tuberculosis of the lungs, has been more or less abandoned. Nevertheless, there has remained this very logical use for tuberculin in conditions of the eyes, and we know that it has a decided field of usefulness in localized tuberculous adenitis. Possibly if we knew more about how to use it and under what exact conditions, it still might be found, as in the hands of some men who still use it, to have a much wider field of accepted usefulness.

We are much indebted to Dr. Fulton for this splendid review.

DR. CALLAHAN (Pokegama): It is very interesting for those of us who are engaged mainly in the treatment of pulmonary tuberculosis to hear something of the diagnosis and treatment of the more special tuberculous conditions.

In a very limited experience with tuberculous eye conditions, I agree quite heartily with Doctor Fulton on the value of tuberculin in the treatment of ocular tuberculosis in the absence of a progressive tuberculous lesion in other parts of the body. About three years ago, Corper and his co-workers of Denver published an article on the eye as a portal of entry for tubercle bacilli in pulmonary tuberculosis. In Corper's opinion, many viable tubercle bacilli get into the eye from dust and the spray from the cough of positive cases, which are carried through the tear ducts into the posterior pharynx and from the pharynx into the trachea and lungs in a very short time. It just occurred to me that in cases of previous injury or disease of the conjunctiva some of these bacilli may occasionally cause a primary ocular tuberculosis.

DR. A. T. LAIRD: I was very much interested in Dr. Fulton's paper especially in his reference to the use of tuberculin. In no form of tuberculosis has the value of the tuberculin treatment been more thoroughly established than in lesions affecting the eye. Several of our patients who have had keratitis and phlyctenular conjunctivitis have improved under tuberculin treatment given in connection with usual sanatorium care.

PHYSICIANS ATTACK MACFADDEN JOURNAL

An attack on *Physical Culture* magazine, a Bernarr Macfadden publication, is featured in the November *Hygeia*, popular health magazine published by the American Medical Association.

The magazine announces that this is the first of a series of articles entitled "Exploiting the Health Interest" which will discuss the manner in which the desire for health and the hope of relief from suffering and disease are exploited by promoters of peculiar cults and fads.

"Future articles," says the magazine, "will deal not only with other Macfadden periodicals but also with all the prophets of nondescript cults that thrive on the delusions they create in the minds of the sick."

After characterizing *Physical Culture* as a magazine edited for morons, every issue of which reeks with sex appeal, *Hygeia* takes up the type of advertising that makes *Physical Culture* commercially profitable. It publishes reproductions of advertisements, formerly carried by *Physical Culture*, of concerns that have been declared frauds by the federal government and debarred from the use of the mails.

"The amount of harm that *Physical Culture* does is incalculable," says *Hygeia*. "Not only does its advertising pages inevitably tend to destroy public confidence in the printed word, but its editorial pages pervert public intelligence on matters pertaining to scientific medicine and promulgate doctrines that have pernicious and far-reaching effects on the public health."

PERIODIC PHYSICAL EXAMINATIONS*

HENRY W. COOK, M.D.

Vice President and Medical Director
Northwestern National Life Ins. Co.

Minneapolis

Osler said that "Sanitary science, hygiene, or preventive medicine may claim to be one of the brightest spots in the history of the nineteenth century;" and certainly in the twentieth century so far, the distinguishing emphasis of scientific medicine has been on prevention rather than on cure.

While this fact is more or less generally recognized, we may not keep in mind the profound changes that it has been responsible for in both medical theory and practice. The "healing art," which was for centuries descriptive of the scope of medicine, would today be grossly inadequate. The limits of "healing," or the restoration of diseased tissue, especially of the chronic types, are so restricted as to make medical practice relatively discouraging, were not this vast and largely unexplored field of prevention widening before us.

While each of the steps in the preventive field have been notable in themselves, they have only gradually brought to the medical profession a new conception of its relationship and obligation to the general public. The traditional attitude of medicine has been mystical, secretive, exclusive. Perhaps as a healing art this had some justification. The prescription written in Latin probably carried added potency, but in the preventive field the educated, enlightened co-operation of the lay public is absolutely essential to any real progress.

As a conception of the possibilities of preventive medicine has gained a hold on the imagination of the profession, and the necessity for the education and understanding of the public becomes recognized, our members have gradually—all too gradually—reversed the traditional attitude, and are now seeking to educate the layman into the principles underlying medical science, and into its practice as it relates to the preservation of health and prolongation of life.

Two striking illustrations, from many, will suffice to show the necessary trend from medical practice as a healing art to preventive medicine as a universal social benefaction.

First came the discovery and use of quinine as a cure for malaria, a method of healing for medical practice; then the discovery of the mosquito as the carrier of the malarial parasite, and the method of prevention for the state and the public at large.

Also, the treatment of diphtheria by intubation, a real contribution; then by antitoxin, a far greater contribution,—both a method of healing for medical practice. But now we have toxin-antitoxin, the greatest of all, but requiring the intelligent and informed co-operation of the public to be made effective.

Preventive medicine, both from the professional and lay viewpoint, has no more important, though relatively neglected, opportunity than the periodic physical examination. Here the layman is absolutely dependent on the medical profession for service, instruction, and advice. He cannot, as in other fields of preventive medicine, take this scientific contribution as he did the discovery of the transmission of malaria, and apply it by sanitary regulations or engineering methods.

In the prevention or treatment of practically all forms of disease—acute, chronic, infectious, or toxic—the periodic physical examination is of the greatest value, both in maintaining a standard of personal hygiene and health which may prevent the onset or modify the progress of disease, and in showing the earliest stage of disease when it may be susceptible to cure or arrest.

Today, the wisdom of the periodic physical examination is so generally conceded that it is a matter of astonishment that it was little heard of until the past decade, and that it is comparatively so little practiced by the profession or the layman.

It will not be the purpose of this paper to present the blanks of the periodic examination, nor to cover in detail the diseases which it may reveal, nor the treatment which may be based upon its data. Approved forms have been prepared by a committee of the American Medical Association, and are obtainable from that organization; the symptoms and signs developed, and their interpretation, are merely clinical medicine.

It may be of interest, however, to inquire into the cause of the comparative failure of the periodic physical examination to gain its proper recognition in practice, and also whether experience so far obtained justifies the claims made for it.

*Presented at the annual meeting of the Minnesota State Medical Association, St. Cloud, Minn., October 19, 1924.

There are two essential factors in the successful practice of the periodic physical examination:

1. An educated public,
2. A competent profession,

each being very dependent upon the other as a necessary complement.

Education is a slow and laborious process in any field of knowledge. This would be true if all adults reached even a moderate degree of mentality. But when mentality is of such wide variation, and when so large a proportion of the population is of very low natural intelligence, and equipped with but meager education well diluted with superstition, ignorance, and misinformation, it is easier to understand the very gradual spread of the appreciation and utilization of some of the most important scientific contributions.

Sickness has for ages been thought of as the punishment or manifestation of displeasure of gods or a god, depending on the particular theological dogma; and the most potent preventive measures have been prayer or votive offerings, supplemented in the post facto emergency of active illness by the remedial devices of the healing art.

Belief in sickness as sin and health as virtue, uninfluenced by mere material conditions, is only a modern variation of this superstition, which is even today reflected to a greater or less extent in the prayers, doctrines, and practices of nearly all varieties of religious faith.

As appreciation of the value of the periodic physical examination is incompatible with such a belief, it is not so surprising that progress is slow. The layman must be taught to realize that health is determined by a normal functioning of the spiritual, mental, and physical elements in the human trinity; that a careful history and examination will in many cases reveal that an abnormal condition exists in one or all of these factors, and that knowledge of the true condition existing at certain periodic intervals gives an intelligent basis for continuing a condition of health or correcting any abnormal variation which may be present.

However, in spite of reactionaries and fundamentalists in secular directions as well as in religion, education is spreading rapidly, and ignorance and superstition are giving way before it. More and more, national and local legislative action is based on the Gladstone doctrine that "In the health of the people lies the strength of the nation." This has been for long recognized in the

emergency of war, but now is recognized in the progress of peaceful development.

It was interesting and encouraging recently to have Secretary of War Weeks ask for national health as a feature of Defense Day, calling upon the medical men in each community to "issue friendly advice to their fellow citizens" and to provide for examination to assess the "vitality of our citizenship."

Industrial competition is a new and potent factor in education for better health standards. Most industries of the higher grade now require health as a condition of employment, and inaugurate employment with a physical examination, required or offered at subsequent intervals not longer than one year throughout the period of service.

Life insurance companies, with their fully equipped medical departments, have had wonderful opportunities, only partly embraced, to spread through policyholders and agents sound health propaganda. Many of these companies are offering periodic physical examination free of charge to policyholders and employees,—and about 5 to 7 per cent take advantage of this offer.

Several cities—Pittsburgh, Boston, New York—have offered periodic health examinations at municipal clinics, and these have been well patronized.

Numerous commercial enterprises, more or less legitimate, have sprung up in response to the popular demand for these health examinations. One of them, the Life Extension Institute, cannot be too highly praised for the splendid educational and practical work which it has done through its bulletins, advertisements, and health service. Many other similar institutions, however, are merely quack replicas of the Institute, and are doing the cause of legitimate preventive medicine much harm.

There is, however, some evidence that public education in the periodic physical examination has advanced beyond the stage where adequate appreciation by the medical profession always meets the need. It is a very common experience in insurance medicine and in periodic physical examination work to come across instances where interest of the layman in his health or in health examination has been ridiculed or discouraged by the physician, or met with indifference. Some physicians take the position that periodic examinations tend to make the individual nervous or a hypochondriac. A re-

quest for a careful examination is met by a joking reassurance.

The time is passing, however, when jovial optimism can acceptably replace careful, intelligent, and scientific clinical methods. Optimism may be the wisest of therapeutic agents, but, as with any therapy, it should follow and not anticipate or replace diagnosis. Any such reversal of sequence is extremely dangerous.

Comparatively few practitioners today, except pediatricians, oculists, and dentists, are urging periodic health examination on their patients. This failure is due to several causes. In the first place, in city practice the family physician is becoming less common, and obviously a patient cannot go to ten or twelve specialists each year for as many special examinations.

Then again, the practitioner often hesitates to urge well people to come to him for periodic examination for fear that he may be suspected of urging unnecessary work and expense for his own profit.

Possibly some physicians are too careless and slipshod in their history records and examination methods to make worth-while use of the periodic physical examination opportunity and data.

Undoubtedly, also, some physicians are skeptical about the real value of the periodic examination. It is quite true that it has not fully met all the enthusiastic claims that have been made for it. It has suffered, as have other good movements, at the hands of its friends. Periodic examinations will not make everyone live to old age. Their possibilities are strictly limited. Medicine is far from an exact science. Even with the most complete and prolonged clinical and laboratory examination, disease may be overlooked and data misinterpreted. An ordinary periodic examination must be relatively simple and superficial.

Less emphasis should be placed upon the value of the periodic examination in revealing disease, and more stress should be put upon its great value in health education. At the periodic examination the opportunity can be utilized, by the wise practitioner, to teach men, women, and children to live wholesomely, not necessarily or merely to have some insidious disease detected.

And above all must the profession take the opportunities offered by the periodic examination for profitable treatment or operation, with the greatest conservatism and singleness of purpose. The man who recommends that he or his consulting col-

league remove every enlarged tonsil found on examination, treat every symptom or correct every physical deviation from an arbitrary standard, is practicing meddlesome medicine or surgery, and is discrediting his profession.

But while frankly facing the possibilities of abuse, let us not fail to appreciate the great value of the periodic physical examination, nor the high standards of service and practice by the large majority of the profession.

The periodic examination is educational to the patient and the physician,—each knows the other better, to their mutual advantage, both during continued health and also when any symptoms or signs develop. Rather than making a patient nervous, a well-conducted physical examination is the best possible remedy to calm and relieve nervous fears. If an examination worries or distresses a patient instead of cheering and comforting him, the physician who has such an experience should closely examine his own methods and mental attitude.

Each step in the examination gives opportunity for advice and counsel in the prevention of disease and maintenance of health of priceless value—if the examiner is qualified to give it. Posture, weight, mental attitude, work, exercise, diet, water, sleep, recreation,—and all the other factors known to modern science as of so much more importance in maintaining health than medication or operation,—are discussed to the infinite benefit of the layman.

And of importance, too, is the finding of early and curable disease,—the trace of sugar or albumin, the rising blood pressure, the neglected eye strain, the toxemia, the early or precancerous ulcer or tumor, the beginning thyroid enlargement, anemia, and other signs and symptoms which may be invaluable indications of needed treatment.

Ordinarily it would be extremely difficult to accurately evaluate the good accomplished in promoting health and prolonging life by such a variable factor as the periodic examination, but fortunately there are several sources of information which throw a definite light on the subject.

In factories and offices where the periodic examination has been adopted as a routine practice, a very marked reduction in absenteeism for sickness has been observed. There are usually other favorable factors introduced at the same time, such as more adequate treatment, health educational

propaganda, etc., but unquestionably the periodic "health audit" is a most important factor.

When we realize that \$3,000,000,000 is the annual tax levied by illness last year in this country, we can gain some conception of the need for every possible preventive measure.

The most striking proof, however, of the definite value and benefit from the periodic examination, is the experience of the Metropolitan Life Insurance Company. This company was the first to offer its policyholders periodic physical examination, which it did through the Life Extension Institute, immediately on that institution's organization in 1914. From 1914 to 1922, 63,000 periodic physical examinations were made, at a cost to the company of \$225,000. In order to obtain as long an experience as possible, the policyholders who took the examination during 1914 and 1915,—5,987 in all,—were intensively studied in the light of subsequent experience. This group had an experience of 33,629 years, and showed 217 deaths, as against an expected death loss of 412, according to the American Experience Table,—or an actual mortality rate of 53 per cent. The lower death rate was for practically every age period, the most favorable being from ages forty to sixty, inclusive.

While this was perhaps a select group, as naturally the more intelligent and careful would accept

the offer of the examination, on the other hand, many who elect examination do so because of some symptom from which they may be suffering.

The Metropolitan studied these policyholders critically, and their final opinion was that they had saved in actual dollars and cents from mortality, two for every one they had spent on periodic physical examination.

This striking and definite statistical study, supported by the best clinical opinion as to the value of the periodic examination, should induce each member of the profession to lend the weight of his influence among his friends and patients, and with the public at large, to urge every man, woman, and child to have at least annually a thorough, competent examination.

I trust, also, that this Society may intensively co-operate with the American Medical Association in furthering interest among our members in this field, either through the active work of one of our committees already appointed, or by a special committee, as has been done in other State societies.

In enlarging the routine practice of the periodic physical examination, we shall contribute in no small measure to the great service which our profession is rendering humanity in the maintenance of public health and in the prolongation of human life.

THE BAN ON HEROIN

As long ago as 1917, the Council on Pharmacy and Chemistry deleted heroin from its handbook of Useful Drugs, saying: "The Council holds that heroin has no advantage over morphin; that it has every disadvantage of morphin; and that on the whole its introduction has been harmful, in that it furnished a specious means on the one hand of avoiding the well founded popular fears of morphin by substituting another habit-forming drug." In 1920 the House of Delegates resolved, "that heroin be eliminated from all medicinal preparations; that it should not be administered, prescribed or dispensed; and that the importation, manufacture or sale of heroin should be prohibited in the United States." The recent Congress enacted, June 7, 1924, a bill prohibiting the importation of opium intended for the manufacture of heroin. The Federal Narcotic Control Board has announced that it will not authorize the importation of any opium intended to replace opium or morphin thereafter converted into heroin. This will prevent the open manufacture of heroin in the United States, and as none can be lawfully imported, heroin will soon disappear from the legitimate market.—(*Journal A. M. A.*, Sept. 6, 1924, p. 784.)

BENZYL BENZOATE AND ARTERIAL HYPERTENSION

While the Council on Pharmacy and Chemistry recognizes the existence of honest differences of opinion on many therapeutic questions, and desires to be liberal in its attitude toward all worthy innovations, it refuses to admit claims which are neither in harmony with already accepted facts nor supported by acceptable evidence. The wisdom of this rigorous attitude has been recently demonstrated anew with respect to the widely acclaimed benzyl benzoate. The Council has insisted that its clinical use is still in the experimental stage, despite the alluring announcements of the various alleged virtues of the compound. Benzyl benzoate has, for example, been recommended and doubtless frequently prescribed for reduction of arterial hypertension. A careful clinical study, however, shows that benzyl benzoate, if taken in 25 to 30 drop doses (20 per cent alcoholic solution), has no effect on blood pressure. Furthermore, even continued therapeutic administration over a period of days produced no effect on the blood pressure of patients suffering with hypertension.—(*Journal A. M. A.*, Oct. 11, 1924, p. 1171.)

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INDICATIONS AND TREATMENT OF ACUTE SUPPURATIVE MASTOIDITIS*

CARL L. LARSEN, M.D.

St. Paul

The presence of so many discharging ears is a positive indication that active measures have been sadly neglected in the treatment of acute mastoiditis. The production of a chronic running ear should be regarded as a serious offense in preventive medicine.

Even today, in the light of a better knowledge concerning mastoid disease, better laboratory and x-ray facilities, more and better qualified otologists than ever before, chronic ears are still prevalent, which leads the writer to but one conclusion, namely, that many of us err on the side of conservatism.

True, there are undoubtedly fewer discharging ears than existed fifteen and twenty years ago, due to: first, the fact that general practitioners and particularly pediatricians, who see so many of these acute cases, treat them with early free incision of the drum membrane and are capable of recognizing mastoid symptoms and call an otologist when conditions seem warranted; second, early removal of tonsils, adenoids and nasal irregularities; third, better care given the patient's general condition.

Tivnen, in a masterly paper in 1919, says considerable difference of opinion may arise among otologists in the interpretation of the various symptoms encountered in acute mastoiditis but practically all are agreed on the following conditions: (1) that the majority of acute mastoiditis cases are chargeable to an extension of a suppurative otitis media to the mastoid cells; (2) that the majority of suppurative middle ear infections are caused by diseased processes in the nose, throat and naso-pharynx; (3) that a moderate amount of mastoid tenderness and a varying degree of mastoid involvement is present in the majority of cases of acute middle ear suppuration, but this mastoid infection and tenderness, if early and adequate drainage be provided, may, unless other determining symptoms develop, be accepted without alarm for several days and does not during this period

of observation demand a mastoid operation; (4) that in addition to the virulence of the infection and resistance of the patient, the particular build and architecture of the individual mastoid process is an important element in estimating and interpreting the clinical development; (5) that the mastoid of infancy or early childhood is anatomically different from that of the adult—that these anatomical variations are a determining influence in inaugurating and extending such infections, and must be reckoned with in interpreting their particular symptomatology.

In order to better understand and interpret the significance of the various signs and symptoms of this condition, it is essential that we briefly consider the pathology. Three stages are commonly recognized: first, the stage of congestion and exudation of serum; second, the stage of pus production; third, the stage of cell destruction and granulation formation. In the first stage, the mucoperiosteal lining of the cells becomes congested and an inflammatory reaction occurs with exudation of serum; the septa between the cells remain intact; the cells are red and filled with serum tinted with blood. In the second stage, the cells contain pus, the septa being preserved. In the third stage the septa break down, granulations develop, pus is formed in too great a quantity to be drained through the tympanic opening and endeavors to find an exit in the path of least resistance.

The history and general condition of the patient should receive most careful consideration. Inquiry should be made as to previous attacks. Experience has demonstrated that acute suppurative otitis media produced by an acute simple rhinitis or pharyngitis is less likely to involve the mastoid; while if the middle ear suppuration accompanies the exanthemata, diphtheria, septic tonsillitis or influenza, the dangers of mastoid extension are greatly increased.

The ordinary attack of acute suppurative otitis media with adequate drainage usually subsides within two weeks. Prolonged prostration, loss of appetite, anemic appearance, general lassitude and restlessness are all signs that suggest rather more than a simple middle ear infection alone.

The symptoms of mastoiditis may be divided into the following and each one will be discussed individually:

*Read before "Clinic Week," St. Paul, 1923, and the North Dakota Academy of Ophthalmology and Otolaryngology, Grand Forks, May, 1923.

1. Pain.
2. Tenderness on pressure.
3. Temperature.
4. Discharge from the external meatus.
5. Changes in the tissues over the mastoid.
6. Sagging of the postero-superior meatal wall.
7. Changes in the drum membrane.
8. Narrowing of the canal.
9. Blood examination.
10. Bacteriological examination of the aural discharge.
11. Roentgenograms of the mastoid.

Pain.—While not always a prominent symptom, it is in the majority of cases a very important one and should have careful consideration in every case, particularly if it continues after the first few days. Like pain in any diseased condition it varies greatly in different individuals. It depends on the adequacy of drainage, the extent of the mastoid involvement and the severity of the infection. In most cases it is over the mastoid or in the ear, at times radiating upward in the temporal or backward in the occipital region. It may be of a sharp or more often of a dull character. Frontal or temporal headache is not an uncommon symptom. Continuous unilateral radiating pain on the same side as the diseased ear is worthy of consideration. Continued pain, after free drainage has been obtained through the drum head, is an indication of mastoid involvement. I regard with special significance the occurrence of pain on cessation or diminution of the discharge from the middle ear. Undoubtedly pain is a more constant symptom and of more consequence in adult mastoiditis than in children. Absence of pain is not an indication that a mastoiditis is not present. I have not infrequently opened mastoids where a great deal of destruction had taken place but pain had been entirely absent.

Tenderness on Pressure.—According to their relative significance and frequency, Whiting enumerates four tender points: (1) antrum; (2) tip; (3) the point of emergence of the emissary vein; (4) the pre-mastoid lamina or posterior wall of the bony meatus. Tenderness is a very constant subjective symptom and when properly elicited and interpreted is of the greatest significance. Naturally it is more marked in the pneumatic type with thin cortex than in those of the sclerotic type

with thick cortex. I regard recurring tenderness of the utmost importance. In the early stages of acute otitis media tenderness of the mastoid may be present, and if drainage is adequate it usually subsides in two or three days. If it recurs and persists with free drainage, operation is necessary.

Temperature.—Temperature is a very variable symptom and is dependent to some extent on the underlying exciting cause, and we may have little or no temperature and still have an involvement of the mastoid. It is usually higher in infants and children. A recurrence of temperature with free drainage is significant of mastoid involvement and a persistent high temperature, providing drainage is free and no other cause is present, may be the only apparent indication for operation.

Discharge from the external meatus.—The great majority of cases of acute mastoiditis have a discharge from the external meatus. The amount, character and duration of the discharge are important. The quantity of aural discharge is not at the beginning of the disease significant but if it persists for five or six weeks, even in the absence of other symptoms, one must conclude that the antrum and mastoid cells are probably sharing to an appreciable extent in the infection and that the patient should be kept under close observation with the thought of establishing adequate drainage by surgical means. A bloody serous discharge continuing ten days or two weeks, particularly in the adult, is usually characteristic of a severe infection and bears careful watching. If the free drainage abruptly ceases, returning in a few hours or a day or so later, the patient's other symptoms meanwhile exhibiting no improvement, a mastoid involvement is to be apprehended. A profuse discharge continuing for over a week accompanied by other local and general symptoms, particularly if the latter are increasing in severity, are indications for surgical intervention.

This leads the writer to briefly consider the most important point in this discussion. How long are we to allow the aural discharge to continue in the absence of other apparent symptoms?

In children we frequently see dry ears and a normal functioning middle ear after weeks of discharge, but on the other hand, a great many become chronic with the attending dangers of serious complications, the menace of a focal infection and the certainty of impairment of the function of

the middle ear. A persistent discharge in adults is always of more consequence than in children, and a discharge continuing for three or four weeks, even in the absence of other symptoms, frequently accompanies destructive changes in the mastoid, which is demonstrated by roentgenograms and necessitates operation. In children we can often with safety wait a longer time. In many of these cases the suppuration is limited to the middle ear and Eustachian tube and removal of adenoids and diseased tonsils will often bring about a prompt cessation of the discharge. This is particularly true when the middle ear suppuration follows a simple nose and throat infection. Many of our leading otologists believe conservative treatment ought to be limited to three weeks. I do not believe that we can place a definite time limit, but I am sure that we are all agreed that a discharge continuing in children for over three weeks should be kept under close surveillance. Pulsating or pumping discharge in the early stage of acute otitis media is frequently present and is not at this time of particular consequence, but if it continues for two or three weeks, it is important and denotes at least antrum involvement and is then often associated with sagging of the postero-superior meatal wall and an operation is indicated.

Changes in the tissue over the mastoid.—Edema, redness and prominence of the auricle are relatively late manifestations of acute mastoiditis. In the early stages of acute otitis media, these changes are frequently seen but subside in a few days if adequate middle ear drainage is established. In infants and early childhood the changes are often due to the pus penetrating the cortex, producing a subperiosteal abscess. One must always eliminate diseased conditions in the external auditory canal in interpreting the condition. They are much more frequent in children than adults. In Bezold's mastoiditis the swelling is situated below the tip and frequently involves the soft tissues of the neck, caused by the pus penetrating the tip of the mastoid at the digastric fossa. In zygomatic mastoiditis (an involvement of the zygomatic cells) the swelling is high up, extending backward to the occipital and forward to the temporal regions. I have seen several of these cases and in a few was impressed with the relatively few other symptoms that they exhibited.

Sagging of the postero-superior meatal wall.—In the opinion of most otologists this is considered

a pathognomonic sign of mastoid involvement, demanding immediate operation. This symptom unaccompanied by other symptoms, I feel should not be considered too seriously. It can be caused by a filled up antrum which may drain through an adequate drum opening. I have repeatedly seen cases presenting prolapse of the drum clear up under conservative treatment. However, in most cases it is associated with other symptoms rendering the indication for operation comparatively easy.

Changes in the drum membrane.—The drum is usually perforated at some point, or is red, swollen and bulging. We do find an increased number of cases with the drum membrane intact. Here the membrane will not glisten like the normal. It has a dull appearance and the hammer handle will appear narrow. If the perforation is in Shrapnell's membrane it is indicative of an acute exacerbation of a chronic otorrhea. Polypi protruding through the drum opening, I consider an indication for operation. A great many cases of primary mastoiditis without apparent involvement of the middle ear have been reported. Dabney classifies the condition as idiopathic mastoid abscess. He says, "I wish the title to be understood as meaning an abscess in the mastoid process of the temporal bone without any immediately preceding or accompanying inflammatory involvement of the tympanum." Hempstead, of the Mayo Clinic, in a recent article on this subject, in which he reported three cases, says: "The term primary mastoiditis, as it has been designated in the literature, is misleading in such cases, since the infection must be primarily in the mastoid cells, and not secondary to an inflammation of the middle ear that has cleared up. It is possible to conceive of a blood-borne infection, after a severe local injury, as in osteomyelitis of other bones, although there is no more reason to expect such an infection in the mastoid than in other cavities, for example, the accessory sinuses. It is quite probable that some of these cases are latent suppurative otitis media, and not mastoiditis without involvement of the middle ear." He concludes that while the study of these cases does not permit definite conclusions, it indicates the existence of an antecedent otitis media without symptoms.

Narrowing of the canal wall.—In the absence of any inflammatory condition in the canal, this symp-

tom is particularly significant. It is, I believe, more reliable than any other one symptom. It denotes pressure back of the posterior wall.

Blood examinations.—They are not of much value in uncomplicated mastoiditis. A marked increased leukocyte count with an increased polynuclear percentage in conjunction with other confirmatory symptoms is an aid in diagnosis.

Bacteriological examination of the aural discharge.—Most observers regard bacteriological examinations of doubtful diagnostic value. The pneumococcus, Type III, formerly called the streptococcus mucosus, the streptococcus viridans or the streptococcus hemolyticus, are the most virulent and undoubtedly the direct cause of most of the cases of mastoiditis that require operation. I do not see how we can prognosticate from the organism found in the discharge the future course or severity of the disease, this being a question determined by a normal or lowered resistance and by the local diseased process.

Roentgenograms of the mastoid.—There is no doubt that the x-ray when properly taken and correctly interpreted, is in the majority of cases, an aid in diagnosis. Frequently it is the determining factor. I am conscious of the fact that a great many place little or no reliance on the x-ray. In some cases we have not always found what the x-ray apparently demonstrated, in others we were somewhat misled, but in the aggregate our findings corresponded and it has led us to adopt the procedure in all doubtful cases. We have seen many cases that we were convinced had mastoiditis but were unable to convince the physician, patient or parents that such a condition existed, where a roentgenogram verified the diagnosis. However, I much prefer to operate on the clinical symptoms.

Facial paralysis occurring during the course of an acute otitis is an absolute indication for immediate operation.

Gradenigo's symptom, a paresis of the sixth nerve, unless accompanied by other definite clinical symptoms, is not necessarily an indication for operation.

From the foregoing it can readily be seen that the discussion of this important subject is narrowed down to two questions: first, the question of the presence or absence of mastoiditis; second, when should we operate in mastoiditis?

In attempting to answer these questions, the

writer is led to the following conclusions based upon a careful survey of the literature of today and a personal experience in over three hundred cases.

1. Every acute otorrhea should be considered as a potential mastoiditis. The difference is largely one of degree.

2. The majority of cases of acute otitis media do not require operation before the third week because bone softening or decalcification usually requires about three weeks, depending upon the virulence of the infection, the resistance of the patient, the degree of tympanic drainage, and the type of the mastoid bone.

3. Relatively few serious complications follow acute mastoiditis in children caused by the ordinary nose and throat infections. Continued aural discharge in adults is of more serious import.

4. Early operations do not always prevent complications and too early operations may cause complications.

5. Most chronic ears follow the exanthemata (notably scarlet fever and measles), septic tonsillitis and influenza and it is in these cases, particularly following scarlet fever, that the writer urges early mastoid drainage, preventing what is otherwise inevitable, the menace of a discharging foci and the impairment of the function of the middle ear.

6. An acute discharge from the ear should not be allowed to continue for more than six or eight weeks at the utmost, if for no other reason than the impairment to hearing which is so likely to follow.

7. Inasmuch as the laws guiding us in the presence of a given group of indications have been well established for a number of years, only the physician in charge who observes the case from day to day can determine the presence or absence of mastoiditis and can decide the time of operation.

Treatment.—Treatment of acute mastoiditis may be considered under two heads: (1) the treatment of acute mastoiditis including the various abortive measures; (2) the securing of adequate drainage and the extirpation of all diseased conditions by mastoid operation.

Our first aim must of necessity include early and free incision of the drum membrane. If deemed expedient by the surgeon, this can be done under nitrous oxide or ether, or by instilling a few drops

of a mixture containing cocaine hydrochlorate, grains five to ten; alcohol, one dram; anilin oil, one dram.

The incision should be made at the bulging point, extending it upwards and backwards to the posterior meatal wall. This should be followed by a warm, weak antiseptic irrigation. One must remember that bulging of the drum membrane is relatively a late symptom of middle ear suppuration and we should not wait for its appearance before deciding to incise the drum membrane. If the incision is too small it should be enlarged. As a rule I am not in sympathy with repeated incisions because it must be borne in mind that it is not the partially healed incision with retention that accounts for the increase of symptoms, but often it is the increased tension put on the cells of the mastoid that are overfilled with pus, which, from mechanical hindrance, produces the pain, and the increased infection produces the temperature. Almost all the discharging ears that last through life can be traced to a spontaneous perforation. The patient should be put to bed, lying on the affected side, given a laxative, placed on a light diet and every attention given to the general condition. In the early stages an ice bag or heat may be employed. Personally, I prefer cold in the early stages, but the majority of patients, particularly children, are made more comfortable with heat. Politzer states that if the cold eases the pain, the continuation of the inflammation may be assumed; if it proves irritable and unpleasant, then disappearance of the inflammation is probable. Seldom is one obliged to administer sedatives to children. In young adolescents and the adult, I have no hesitancy in employing them, always bearing in mind the fact that the relief thus afforded may tend to mask the symptoms. In the early stages, gentle, warm irrigation with a saturated solution of boric acid, drying well afterward, is not only cleansing but often relieves the pain. After the first few days I favor the dry treatment, mopping the ears dry with cotton-wrapped applicators dipped in borated vaseline, followed by the insertion of a small piece of sterile gauze in the canal to facilitate drainage. The vaseline makes the application less difficult, anoints the canal, thus protecting the skin from the irritating effects of the discharge. Continued irrigations waterlog the drum and to some extent the middle ear, thus favoring suppura-

tion rather than retarding it. I am emphatically opposed to prolonged irrigation.

I realize that in small children, irrigation is more easily administered than mopping, but the former should not be overdone.

Suction is the most efficient means of draining the middle ear. It should be gently and lightly applied two or three times daily.

In children, I doubt the efficacy of any medication to the nose and throat. Many of these children, particularly if they have been susceptible to nasal and throat infection, do splendidly on cod liver oil.

In the Vienna clinics, heat in the form of light, using a high power electric bulb with a condenser, is being universally used, not only in cases of acute otitis media but in early mastoiditis, with most gratifying results. The light is held close to the retro-auricular region from forty-five minutes to one hour the first day, one and one-half hours the second day, and from one and one-half to two hours daily thereafter, preferably half of the time in the morning, the remaining time in the afternoon. I have seen acute otitis media of several weeks' duration clear up very quickly and in acute mastoiditis where operation was apparently indicated, cure was effectively produced in many instances. This form of treatment, too, is very valuable in slow healing wounds following operation. I cannot recommend this valuable adjunct in treatment too highly. There can be no doubt that some of the continuous discharging ears are simply tuborrhea, the suppuration being confined to the Eustachian tube. This usually responds promptly to removal of nasal conditions, especially the removal of adenoids and diseased tonsils and the correction of the nose-blowing habit. The latter, I feel certain, is responsible for many of our acute and chronic ears. There is too much blowing of the nose. These patients should be instructed to blow the nose without closing either nostril.

I am not an advocate of tonsil and adenoid surgery in the early stage of acute otitis media.

Protein therapy and autovaccinotherapy have not shown the results expected and probably yield their greatest influence in post-operative cases.

Operation.—The technique of the classical simple mastoidectomy, you are all familiar with and requires no elaboration. A sufficiently wide opening made into the antrum to provide adequate

drainage and the careful, clean removal of all diseased cortex are the essential features of the operation. Early healing of the mastoid wound favored by the so-called blood-clot method (the immediate closure of the post-auricular opening) or the removal of drains as early as is compatible with safety are the additional important essentials. The immediate closure of the wound is contraindicated in complicated cases or where the dura or sinus has been exposed.

In these cases we should always remember the law of surgery, namely, that wounds in the process of normal and healthy repair should be subjected to the least possible mechanical disturbance. All dressings should be as light as possible. The outer dressings should be changed in twenty-four hours and daily thereafter. The drain should not be disturbed for four or five days and then gradually removed so as not to disturb the granulations. All bandages should be removed as soon as possible. If the wound shows a great deal of reaction, nothing has given us as much satisfaction as hot, wet boric acid dressings. We have encountered such cases particularly following scarlet fever. I am convinced that the use of wet dressings in this class of cases has been generally neglected. Later on if healing is slow the wound should be exposed to the air and sunlight or radiation.

Causes of failure necessitating a second operation are generally due to too early operation or because diseased cells have been overlooked either in the tip or the zygoma.

In Minnesota in 1921, there was one death in every two hundred and twenty-eight, due to ear diseases. There were twenty-seven deaths attributed directly to mastoiditis.

When we recall that between one-fourth and one-half per cent of all deaths are due to ear diseases, and that between one and two per cent of our population have chronic running ears, I hope that this subject will receive the attention that it so justly deserves.

PLURIGLANDULAR PRODUCTS OF HARROWER

In 1919, the Council on Pharmacy and Chemistry examined a number of the products of the firm of Henry R. Harrower, Glendale, California. It found none acceptable for New and Non-official Remedies. An examination of the "literature" sent out by the firm during the last year shows that its business is still largely in complex mixtures such as those reported on adversely by the Council.—(*Journal A. M. A.*, Oct. 4, 1924, p. 1098.)

FRACTURES OF THE HIP*

MELVIN S. HENDERSON, M.D.

Section on Orthopedics, Division of Surgery,
Mayo Clinic
Rochester, Minnesota

Fractures of the hip occur at all ages, but are most common in elderly persons. The term, in its broadest sense, may include fractures through the trochanter, but I shall discuss here only those through the neck of the femur, just below the head (sub-capital), through the narrow part of the neck, or at the juncture of the neck and the trochanter. Dislocations of the hip are rare; they occur in persons in the more active period of life, from twenty to fifty years of age. Epiphyseal separations occur generally in children under fifteen years.

The hip-joint, one of the ball and socket type, is firm and stable, owing to the generous depth of the acetabulum, which is increased by the strong cotyloid ligament, to the heavy musculature, and to the fan-shaped arrangement of the muscles, and their insertion close to the joint. Weight-bearing is also a prominent factor in the stability of the hip. The capsule is greatly thickened in certain portions to form strong ligaments, well illustrated by the Y or the femoral ligament on the anterior aspect.

The architectural plan of the neck of the femur shows nature's attempt to strengthen this bridge of bone that is subjected to so much strain. The under part of the neck is the thickest. The elderly person's bones are atrophic and more brittle, and hence give way more frequently than those of the younger person. A cross section shows a system of finely formed bony arches, Gothic in type, thrown across from side to side.

A fracture of the hip is intra-articular, and the synovial fluid that bathes the fractured surfaces of bone is an inhibiting factor in the formation of callus. Delayed union, in the ordinary sense, does not occur in fractures of the hip. The fracture either unites or becomes a case of non-union in a comparatively short time. The proximal fragment is devoid of muscular attachments, and its only source of nourishment is the ligamentum teres and the joint fluid. The capsule of the joint has no

*Read before the Northern Minnesota Medical Association, Duluth, August 4-5, 1924.

attachment to the proximal fragment, except in rare instances in fractures near the trochanter, when there may be a small attachment on the posterior surface. It is apparent that practically all of the reparative process will have to come from the distal fragment. It is very evident also, that in the reduction and setting of such a fracture, the muscular spasm will all be exerted on the distal fragment, and this fragment will have to be manipulated and brought into contact and correct alignment with the upper or proximal fragment. The capsule is strong and reinforced in parts, forming ligaments, and portions of it may, in rare instances, get between the fragments. If this occurs, non-union may be the result in spite of careful and painstaking treatment. When reduction is not satisfactory, open operation should be resorted to. In two instances a few weeks after injury and at

close to the head and form the group formerly strictly called the intracapsular. On the other hand, if the fracture occurs through direct violence, as the result of a fall on the trochanter, the break is usually through the trochanter, or at its juncture with the neck. In this type a better prognosis may be given than in the sub-capital type, owing to the fact that there is better circulation in the proximal fragment, because of the capsular insertion into it and because usually the patients are younger and in better general condition. When the fracture is through the trochanter, union always occurs, although the position may not be of the best. The only exception I have ever seen was in a case of syphilis of the central nervous system. The signs and symptoms, if the fracture is sub-capital or near the trochanter, are the same, and the differentiation can only be made by aid of the x-ray.

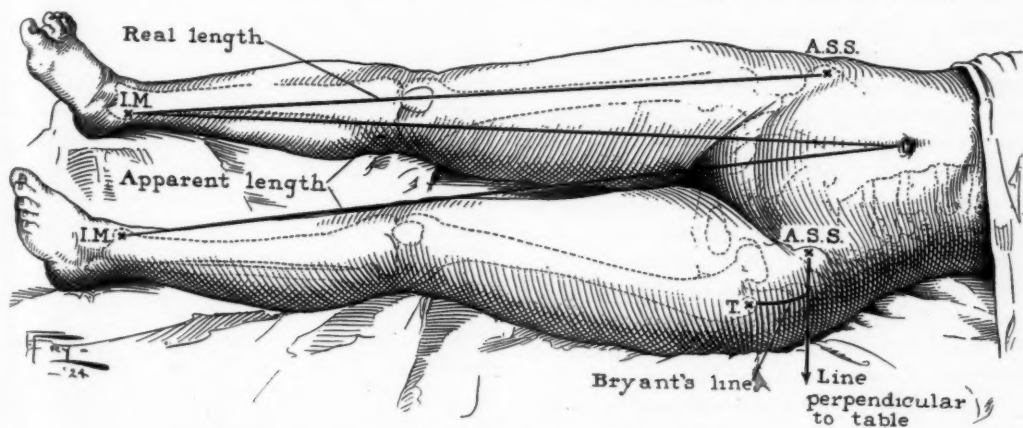


Fig. 1. Measurements used to determine presence or absence of shortening.

tempt at reduction elsewhere, we found the fragments slipped by each other. Clearly under such conditions open operation is necessary.

The Y, or ilio-femoral ligament, is of aid in the reduction of a fracture.

When a reduction is made, and the hip is placed in abduction and extension, this strong ligament becomes taut and acts as a sort of splint in forcing the fragments into alignment, just as do the triceps muscle and tendon in the reduction of supra-condylar fractures of the elbow joint. The exact method or manner of sustaining the fracture varies. Frail, elderly persons may sustain fractures through indirect violence, the fall coming as a result of the break. Such fractures are usually

Disability, even without much pain, following an elderly person's fall on the hip should render the surgeon wary, and unwilling to make a diagnosis of sprain and contusion unless a thorough x-ray examination fails to reveal a fracture. The outstanding subjective symptoms are (1) disability following a fall, and (2) pain of varying degrees on attempted manipulation, or when the limb is used. Instances are not uncommon of the patient's being able to walk for some distance because of the stability of the impaction. The objective symptoms are of more importance: (1) eversion of the leg and foot, (2) shortening of varying degrees, (3) displacement of the trochanter to a posterior plane, always accompanied by eversion of

the foot, (4) crepitus on manipulation, (5) slight swelling and often local tenderness of the hip-joint manifested on palpation, (6) inability, except in firmly impacted fractures, to lift the heel from the bed or table while the knee is extended, and (7) a good x-ray plate or film. The last mentioned will definitely establish the diagnosis, and render unnecessary the manipulation to elicit crepitus.

The absence of the classical clinical signs of fractures of the hip may lead one into the pitfall of mistaken diagnosis if the fracture is well impacted. Time and again have patients presenting themselves with non-union in the hip-joint stated that at the time of the accident their physicians had examined them carefully, measured their legs for comparison of length, then manipulated for crepitus, and because of the absence of these signs had insisted that there was no fracture. Months later, when prolonged disability had demanded further consultation, much to the chagrin of the attending physician, shortening and crepitus had been found, and x-ray examinations had clearly revealed a fracture. The explanation is that there had been good impaction at the time of the accident, but as no fixation was provided, the impaction had broken down. Such cases emphasize the necessity for re-examining at intervals, as one would a patient seen for the first time, if he does not make the recovery anticipated. Measurements are important, and it may not be amiss to emphasize the different ways of accurately taking them. The "real" length is recorded by measuring from the anterosuperior spine to the internal malleolus on both sides. The "apparent" length is obtained by measuring from the umbilicus to the internal malleolus on both sides (Fig. 1). Difference can be made in the apparent length by the patient, by simply tilting the pelvis, but this discrepancy is readily detected by measuring for the actual length. When there is real shortening due to a fracture of the hip, the top of the trochanter will ride above Nelaton's line, an imaginary line drawn from the anterosuperior spine to the tuberosity of the ischium. Also the length of the so-called Bryant's line may be shortened (Fig. 1). This line is obtained by dropping a perpendicular line from the anterosuperior spine to the table with the patient lying on his back. The distance between the top of the greater trochanter and this line will be shortened on the affected side.

We must beware of placing our trust in impaction. Undoubtedly impacted fractures of the hip do sometimes unite firmly with little or no treatment. As I have stated, in a large number of our cases of ununited fractures of the hip a diagnosis of fracture was not made at the time of the accident because there was no appreciable deformity and no shortening demonstrated. In others the treatment had been indifferent and unscientific, carried out more as a ritual, and consisted in applying an ordinary Buck's extension, a long side splint, sand bags on each side of the leg, and so forth. There must be a comprehensive understanding of the pathologic condition present, knowledge of the type of tissue being dealt with, and of the simple mechanics necessary to correct



Fig. 2. Recent fracture of the neck of the femur before reduction.

the deformity. The means to attain the end desired, namely anatomic restoration of the injured part and the fixation in that position until union occurs, may vary according to the method of the surgeon. However, when such surgeons as Royal Whitman and Willis Campbell have had the opportunity to treat a large number of patients with a high percentage of excellent results, it behooves us to follow their teaching and practice their methods, unless circumstances prevent us from so doing, or we have something better to offer. I believe that the abduction method, as advocated so strongly by Whitman, and practiced so successfully on a large number of patients by Campbell, is the

method of choice and should be thoroughly understood by all who undertake the treatment of this serious type of fracture (Figs. 2 and 3). The old belief that the majority of fractures of the hip-joint fail to unite is in the discard, and not to be countenanced in modern surgery. On the other hand, to say that treatment of this sort should be accorded all fractures of the hip is unreasonable. We are all occasionally confronted with the feeble old woman or man of seventy, eighty, or ninety years, whose reserve is almost at the zero point. They are senile, and cerebral arteriosclerosis is advanced. They cannot stand any confinement, and the only thing to do in such a case is to treat the patient and not the fracture. In the past there was too much of a tendency to treat the patient

will appear to be a greater degree of absorption of the neck than really exists.

The treatment of a recent fracture of the hip may be undertaken with confidence, unless the patient is too old or feeble to stand confinement. When possible, the patient should be placed in a hospital, but this is not always done. The emergency is just as great as in most abdominal disorders, and yet a patient with a fractured hip is treated in the home, whereas a patient with an abdominal lesion is rushed to the hospital. Under an anesthetic and preferably on a fracture table, the impaction should be broken up, the leg pulled down to normal length, and the hip swung out into full abduction with the foot in inversion. This reduction is usually readily accomplished, the abduction and inversion maintaining securely the correct anatomic reposition of the fragments. Abduction is checked only by the impingement of the trochanter and its tissues against the wall of the pelvis. Also in this position, while the limb is in extension, the ilio-femoral ligament is tightened, which steadies the fragments. In our hands a double plaster-of-Paris spica cast has been very efficient in maintaining this reduction, but any other agent that answers the purpose may be used. Extension in the abducted position by weight and pulley, or by the Thomas extension splint with means to maintain abduction and inversion, can be used, but the frequent attention necessary is decidedly against either. Bradford has reported several excellent results following the use of his abduction hip splint, primarily designed for the treatment of disease of the hip-joint. I have used it in a few instances as a splint applied after the cast has been worn for from eight to ten weeks. In Minnesota, due to the teachings of the late James E. Moore, the Ruth Maxwell traction method has become more or less popularized, and when properly applied with a full understanding of what is being done, it also affords good results. The chief argument against it is that it requires attention to keep it working properly. That the Whitman method gives good results is shown by the careful report of Willis Campbell, who, in an article based on 160 fresh fractures of the hip, carefully reports his results. Twenty-one patients reported for examination several years after dismissal, but of these, sixteen (75 per cent) had solid bony union, and 90 per cent had good functional results, certainly a different

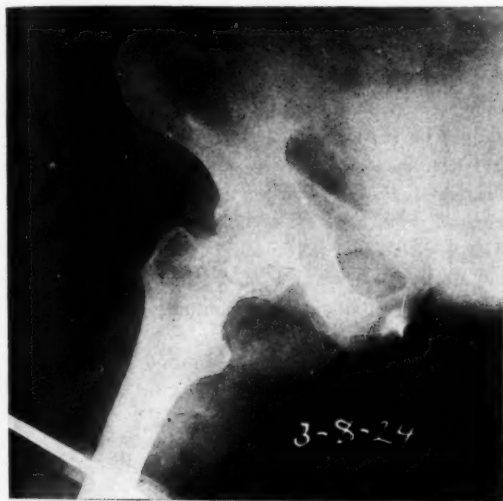


Fig. 3. Same case as Figure 2 after reduction.

and not the fracture because of the impression entertained both by the profession and the laity that treatment was futile, but in the light of our experiences we now strike a better balance.

The diagnosis of non-union of the hip-joint needs no discussion. The prolonged disability, the shortening, with tendency to eversion of the leg, and, usually the inability to raise the heel from the bed or table with the knee extended, are the cardinal signs. The x-ray discloses the typical lack of union with varying degrees of absorption of the neck. The foot should be in the upright or inverted position when the x-rays are made or there

story from that told by the older practitioners that non-union is to be expected in fractures of the hip.

When non-union exists the patient must either be satisfied with a fibrous union, which in some instances is more satisfactory than might be expected, or have some form of reconstruction operation to bring about union of the fragments or to give bony weight-bearing contact of the femur on



Fig. 4. Non-union of hip with absorption of neck.

the pelvic wall, and thus stability. Each case should be studied separately as to whether or not operation should be undertaken. The age, general condition of the patient, as well as the local condition of the fragments as to the amount of neck left, the viability of the head, and so forth, should all be carefully considered. When possible, after the fragments have been exposed and freshened, the bone pegging or grafting operation is the one preferred because it leaves the anatomic relations more nearly normal. As a rule, the results in patients who have had non-union for a year or less are better than in those who have had it longer. For some time it has been our custom to use the fibula as the graft or peg rather than a piece of the tibia. It is larger and stronger, and the patient never misses it if it is taken out 3 or 4 inches above the external malleolus. Of thirty-six patients operated on by the bone pegging method, twenty-two (61 per cent) obtained bony union.

When the absorption of the neck is almost complete and the fibrous union is inadequate to give a serviceable leg, there are two types of operation to be considered, the Brackett operation and the

Whitman operation. The Brackett operation consists in freshening the surfaces of both fragments and reconstructing the neck of the femur by moving the trochanter with its attached muscles to a lower level on the femur. The denuded end of the distal fragment is put in firm apposition to the raw freshened surface of the head. The hip is then put in the fully abducted position in a plaster-of-Paris cast. The Whitman operation has as its base the removal of the head of the femur and the placement in the acetabulum of the reconstructed neck of the femur as described (Figs. 4 and 5). Each has certain advantages, and in certain patients, if the pain is extreme and the disability great, other things being equal, one of the two latter operations may be undertaken.

SUMMARY

While fractures of the hip do not give the high percentage of good results that other fractures do, they nevertheless respond well to treatment. They should be reduced and held in position until healing occurs, at least three months, with no weight bearing for at least six months. The abduction method, advocated by Whitman, has a sound basis. The teaching that non-union is to be expected is in the discard. Careful examination checked up by measurements and x-ray examinations at the time



Fig. 5. Same case as Figure 4 after Whitman reconstruction operation.

of injury will prevent many mistakes. Re-examination clinically at frequent intervals, if x-rays are not made, will reveal the case in which the impaction breaks down. In case of non-union, the bone pegging operation, preferably using the

fibula, is the most efficacious. When the neck of the femur is practically gone, the reconstruction operations of Brackett and Whitman should be considered. It should be remembered, however, that firm fibrous union in some instances is quite adequate for the demands of function in the declining years of life. Each patient with non-union of the hip presents a problem that can only be solved by individual study.

BIBLIOGRAPHY

1. Brackett, E. G., and New, M. S.: Treatment of old ununited fracture of the neck of the femur by transplantation of the head of the femur to the trochanter. *Boston Med. and Surg. Jour.*, 1917, clxxvii, 351-353.
2. Campbell, W. C.: Fractures of the neck of the femur. *Jour. Am. Med. Assn.*, 1923, lxxxi, 1327-1329.
3. Whitman, R.: A further exposition of the abduction treatment of fracture of the neck of the femur. *Boston Med. and Surg. Jour.*, 1917, clxxvi, 751-753.
4. Whitman, R.: Reconstruction operation for ununited fracture of the neck of the femur. *Surg., Gynec. and Obst.*, 1921, xxxii, 479-486.

DISCUSSION

DR. EMIL S. GEIST (Minneapolis): Fracture of the neck of the femur is one of the most serious fractures we have to deal with. The percentage of non-union is still far too high and does not compare at all with any other type of fracture; this even in the face of the Whitman method of treatment, which is pretty well acknowledged to be the best we have to offer up to date in fresh fractures.

The x-ray—even the stereoscopic Roentgenogram—often leaves us in doubt as to whether or not we have achieved that so absolutely necessary desideratum—perfect apposition of the fragments. For without perfect apposition there will be trouble later; either non-union, or a painful hip. We, all of us, have seen cases develop non-union even

when, to judge from all clinical and Roentgenographic evidence, there does exist perfect apposition.

Surely, there must exist some other cause of non-union in this particular kind of fracture besides lack of skill of the physician. Do we not see union the almost universal result in all other fractures, no matter how little the degree of skill employed?

I believe we must look to the synovial fluid for the intrinsic cause of most non-unions of the femoral neck. Witness the old lady of 75 or 80 who breaks the neck of her femur. Personally, I have quit worrying about non-union occurring in her case if she survives the so frequent immediate sequelæ of her fracture (pneumonia, general asthenia, etc.). I have now 8 or 9 such cases, all of whom achieved union—without any treatment excepting rest in bed. Why? I believe it is because there is in these old folks less synovial fluid to interfere with the proper activity of the osteoblasts.

That is why I believe absolute apposition of the fragments is more necessary here than in other types of fracture, i.e., to get away, if possible, from the deleterious effects of the synovial fluid.

Those of us who see many fractures will recall the frequency of non-union in other bones bathed in synovial fluid (head of radius, carpal bones). This idea is by no means original—Cotton has voiced it and others before him.

Absolute apposition is therefore more desirable here than anywhere else in the body. How to achieve it:

Baer, of Baltimore, at the last meeting of the American Orthopedic Association, practically announced his intention of cutting down on all of his (operable) fresh fractures of the neck of the femur and pegging and nailing them because then, as he said: "He knows he has the fragments in apposition and he knows he keeps them there."

I believe that Baer's statement is worth pondering over, for we must adopt some different, radical departure from the methods in vogue today if we are to reduce the percentage of non-union in this so frequent and grave type of lesion.

THE STANDARDIZATION OF DRUGS AMID CHANGING STANDARDS

Medical welfare is hampered in many ways by the machinations of the quack and the health impostor; likewise by the production and distribution of products that are below standard or utterly incapable of accomplishing what the unsuspecting user, be he layman or physician, may rightfully expect of them. Much of the valuable work of the Council on Pharmacy and Chemistry of the American Medical Association consists in revision—in promoting an up-to-date attitude toward well tested novelties in drugs, while preserving a justifiable conservatism toward the valuable contributions of the past. An illustration of the diffi-

culties encountered is afforded by the recent experiences with cod liver oil. The product itself is no novelty, but some of its reputed virtues have been put on a more scientific basis in the last decade. The pharmacopoeial standards have been found insufficient. Today it is standardized on its vitamin potency—and more recently on its antirachitic properties. Such tested cod liver oils are widely advertised and have been accepted for inclusion in New and Non-official Remedies by the Council on Pharmacy and Chemistry. Those who believe in keeping abreast of progress should, therefore, lend their enthusiastic support to agencies, such as the council, that labor unselfishly for them.—(*Jour. A. M. A.*, Oct. 4, 1924, p. 1080.)

SOME PHASES OF EPILEPSY*

ERNEST M. HAMMES, M.D.

Associate Professor of Nervous and Mental Diseases,
Medical School, University of Minnesota

St. Paul

Until recent years epilepsy has been described as a disease characterized by recurrent attacks of convulsions associated with unconsciousness. Many allied conditions have been gradually added, and at present epilepsy is considered merely as a syndrome of some underlying disorder. The old theory that the epileptic convulsion is *always* produced by an explosive discharge of the motor cells of the brain cortex has long been abandoned. This was based mainly on the fact that electric irritation of the cortex produced convulsive seizures. Two other theories have been advanced as to the location of the convulsive site, namely, the combined cortical and subcortical theory, and the medullary theory (Pollock¹). Mingazinni² and others have demonstrated that convulsive seizures are produced in birds by hemorrhage in the pons. Similar observations have been noted in man. Nothnagel believes that general motor irritative phenomena may arise from lesions of the pons alone, while Bechterew states that these are due to indirect irritation of the motor area of the cerebral cortex. However, in decerebrated animals, irritation of the pons produces convulsions, in which the clonic component frequently is absent. On the other hand, Grünwald³ and others have produced typical convulsions in decerebrated dogs and cats by picrotoxin injections. Many similar interesting observations are recorded in the literature. However, no definite location in the brain has as yet been established, which could be termed the convulsive center and which initiates the seizure. It would seem that epileptogenic qualities are possessed by the ganglion cells both of the brain and the brain stem, and that irritation of these cells at any level may produce convulsive attacks.

Fully as interesting and confusing are the various theories advanced as to what makes the individual prone to these periodic convulsions. Toxic factors, both exogenous and endogenous, are given due consideration. Among the former, alcohol heads the list. Endogenous toxins may be pro-

duced locally by the breakdown of cortical tissue in disease, such as arteriosclerosis, general paresis, and other degenerative cerebral disorders. Biochemical substances and endocrine disturbances entering the blood stream are further cited as causative agents. Buscaino⁴ believes that abnormal proteins in the thyroid play an important rôle in many cases of so-called idiopathic epilepsy, and that the convulsions are simply anaphylactic crises. He has demonstrated these proteins in the colloid substance of the thyroid in 71 per cent of epileptics (396 cases) and in only 14 per cent of non-epileptics. He recommends thyroidectomy for these patients. In a study of 128 cases of epilepsy presenting some endocrine disturbance, Patterson⁵ noted evidence of pituitary involvement in an overwhelming majority. Sargent⁶ emphasizes the vascular theory and believes that the vascular disorders produce localized cerebral anemia, which initiates the convulsion. These disorders are due to a disturbance of the sympathetic-autonomic control of the cerebral cortical vessels. Attempts are made to explain traumatic epilepsy on a similar basis. The adhesions between the skull and brain produce traction, if the brain is pulled upon, causing a localized constriction of the cerebral blood vessels and resulting in a localized anemia which precipitates the convulsion. However, in a study of 610 cases of head injuries Holmes and Sargent observed traumatic epilepsy in only 6 per cent, while in a series of 18,000 cases of gun-shot and other head injuries occurring in warfare only 4.5 per cent of epilepsy was noted by Wilson.⁷ Because of this, Wilson hesitates to say that a single case of epilepsy has been caused by a head injury, but feels that the determining agent is an inherited constitutional predisposition to nervous irritability and epilepsy.

In 1917 Terhune⁸ and Reed⁹ published articles on the bacteriological theory of epilepsy. Their findings have not been substantiated by other investigators and were never seriously considered. In recent years L. Pierce Clark¹⁰ suggested the psychogenic factor as a causative agent. He believes that epilepsy is the result of a peculiar personality defect which is constitutional. The epileptic, due to his inability to properly adjust himself to his life's responsibility, reacts by a convulsive seizure. In this way he attempts to escape from distressing situations and unpleasant en-

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vironments. This theory is an interesting one from the psychogenic emotional viewpoint.

Probably the most important causative factor in epilepsy is acidosis (Osnato¹¹). This may depend on a viciously functioning carbohydrate metabolism, causing a general toxicosis, or upon the local production of the toxic substance from disintegrating cellular structures secondary to vascular disturbances. Cuneo has experimentally demonstrated that toxic substances are liberated in the blood by a defect in the alkalization function of the small intestine and liver in the process of carbohydrate metabolism. These toxic substances are capable of causing convulsions when they reach the brain.

The classical syndrome of epilepsy is the grand mal or petit mal attack. However, all its other manifestations are fully as characteristic and significant. Douglas Thom¹² has called attention to the relation between infantile convulsions and the chronic convulsive disorders of later life. In a group of 300 cases studied at the Monson State Hospital for epileptics, 50 per cent had their first convulsion prior to the fourth year. From the records of the Massachusetts General, the Infants' and Children's Hospital, Thom collected 111 cases who had convulsions during the first three years of life. None of these cases were associated with any acute or chronic cerebral condition, birth trauma, or other brain damage. The convulsions occurred with gastro-intestinal disturbances, acute infections, spasmophilia, pertussis, and rickets. In 11 cases no associated disease was noted. Out of these 111 cases 62 patients, or 56 per cent, continued to have convulsions until the time of death, or are having convulsions at the present time or are mentally deficient. Of 29 cases diagnosed as spasmophilia, 16 are similarly affected. These statistics are of special importance when we consider the usual attitude of the general practitioner, and even the pediatrician, toward infantile convulsions. Patrick and Levy¹³ believe that convulsions in infancy and childhood not epileptic, spasmophilic or symptomatic of a gross brain lesion, are evidences in themselves of the individual's increased chance of later epilepsy. They¹⁴ further emphasize the importance of slight attacks in young people, such as a transient dreamy state, a momentary stare, a causeless stop in play, a sudden bobbing of the head, a drop to the floor, the youngster at once jumping up, etc.

Similar recurrences are highly suggestive. An occasional nocturnal enuresis, a subconjunctival hemorrhage occurring during sleep, a sore tongue or a confused feeling upon awakening, a small amount of blood on the pillow without demonstrable cause are sufficient evidence to warrant careful observation for nocturnal epilepsy.

A little youngster five years old who had been diagnosed spasmophilia because of three convulsions at the age of two, was referred to us because of nocturnal enuresis occurring about every six weeks during the past eight months. The parents were instructed to have the patient sleep in the same room with them, and about two weeks ago the father was awakened by a grunting noise and found the little youngster in a grand mal attack. Another very interesting observation was that of a bank clerk, aged 23, who consulted us August 15, 1922, because of increasing difficulty with his bookkeeping. His family and personal history were negative except one sister who was under our care for idiopathic epilepsy. He stated that in the spring of 1922 he first noticed that occasionally after a good night's sleep he would feel confused and drowsy. During that day he was unable to concentrate, would make errors in his bookkeeping, lacked interest in his work, and seemed unduly irritable and fault-finding. This was followed by a good night's rest, after which he seemed perfectly normal for a week or so. These distressing periods gradually became more frequent, and about August 1, 1922, he lost his position because of his many errors and general inadaptability. His sister stated that he was becoming very irritable and unreasonable. His neurological examination was negative. He answered questions promptly, but in a rather sullen, resistive manner. He added and multiplied small examples correctly, but seemed confused and made errors when confronted with larger problems. A tentative diagnosis of incipient dementia precox was made, and under a reconstructive regime and rest he gradually improved. After three months he was able to resume his work. His former difficulties soon recurred and he was advised to secure outdoor occupation. About this time one of his sisters residing in a neighboring state informed me that some years previous she had suffered from a condition similar to her brother and that she had been diagnosed nocturnal epilepsy. She made

marked improvement since taking luminal. She requested the same treatment for her brother. He was given two grains of luminal at bedtime and put on a non-stimulating diet. He has made very satisfactory progress and for the past year has been entirely free from his periods of confusion. He is alert and able to fill a responsible position. His irritability has subsided. Although we were unable to obtain any history of epileptic attacks, the irregular periods of confusion, the definite benefit from luminal, and the family history strongly suggest a nocturnal epilepsy.

Epileptic equivalents, especially psychic manifestations, are always interesting and frequently most difficult of diagnosis. Explosions in the mental sphere may manifest themselves in the various forms of psychosis. Furthermore, epileptics present definite mental changes in the course of their recurrent attacks. According to Lewandowsky,¹⁵ these develop in about 85 per cent of all cases. Brill¹⁶ in his recent textbook of psychiatry groups them into three classes, according to the degree: (1) epileptic character; (2) epileptic psychopathic constitution; and (3) epileptic dementia. These patients are frequently unduly irritable, impulsive, moody, passionate, and easily stirred to emotionalism, particularly of a religious nature. Their affectivity reacts in a morbid manner, in that an existing effect lasts a long time and it is difficult to divert it by new impressions, either pleasing or distressing. In many cases psychic functions are markedly retarded and intelligence is below normal. As the seizures recur over a period of years, memory impairment and other evidences of beginning mental deterioration frequently develop.

Epileptic insanity may manifest itself in the most varied forms of psychosis. Mania, melancholia, delirium, stupor, confusional states, paranoid syndromes are all types which may occur on an epileptic psychopathic constitution. Bruce,¹⁷ however, objects to the term epileptic insanity, and believes that the insanity associated with epilepsy is merely an accident.

The psychic equivalent frequently has the same characteristics in its mental explosion as the grand mal seizure, namely, a sudden onset, a rapid subsidence, and no recollection of what occurred during the attack. This is particularly true of the acutely maniacal type and is well illustrated by the following case:

A man, aged 42, was admitted to the neurological service at the Ancker Hospital, November 12, 1922. His friend gave the following history: About 5 p. m., while walking along the street engaged in a friendly conversation, the patient suddenly became violent and excited. When attempts were made to restrain him he became very noisy, attempted to bite and strike his friend. He was overpowered and brought to the hospital in the police ambulance. It was necessary to put him in full restraint, and with the aid of morphine hypodermically he passed a fairly quiet night. Early the following morning, upon awakening, his acute excitement reappeared. He was noisy, abusive, profane, attempted to break his restraints, and talked in an incoherent manner. In about four hours the maniacal condition gradually subsided, but the confusion continued for about two hours. By noon he was apparently normal, requested to be taken out of restraint, inquired as to where he was, how he was brought to the hospital, etc. He had no recollection of what had transpired, but remembered that he had been walking on Sixth Street in the morning with his friend. He was able to give a clear, concise history. His family history was negative. He denied alcohol and venereal disease. For the past twenty years he had been subject to attacks of epilepsy, grand mal type, averaging about ten seizures a year. He had experienced two acutely maniacal attacks similar to the present one. They occurred two years and nine months ago, respectively, and were of about twenty-four hours' duration. He has no recollection of these, but described the attacks from information he received from his friends. The neurological examination was negative. All laboratory tests were normal. In the absence of any other causative factor and with a history of epilepsy, these three acutely maniacal attacks were evidently epileptic equivalents.

Sometimes these sudden mental explosions assume very serious forms and patients commit impulsive acts. This should always be borne in mind when an unusually brutal crime is committed or when an epileptic gets in conflict with the legal authorities because of some unexpected indiscretion against the social order. A young boy, aged 19, devoted to his mother, who was his constant companion, had frequent grand mal attacks. During the interval he seemed apparently normal. On one occasion, while enjoying a meal with his mother, he suddenly grabbed the bread knife, attacked her, and painfully injured her. About six months later, while both were reading, he suddenly jumped up and struck her with the reading lamp. Both of these attacks were of short duration. He had no recollection of what had happened, but manifested great anxiety lest they should recur. He also showed evidences of beginning mental deterioration, a slight memory impairment, and emotional instability.

It is quite characteristic in these epileptic equivalent

lents that the patient has no recollection of what occurs during the attack. Rarely, however, one encounters a case in which the individual realizes what he is doing, but is unable to exercise sufficient control to govern his actions.

A male, aged 18, was referred to me by Dr. W. C. Roberts, Owatonna, Minn., with negative family and personal history except that he has had grand mal attacks for the past six years, averaging about one a month. During the past year he would develop peculiar mental disturbances during which he would threaten to kill himself and the family, would break furniture, etc. During his ten weeks' stay at the hospital he had three such attacks. Without any apparent reason he would suddenly become sullen and depressed, refuse to stay in his room, wander about the hospital and make insulting remarks to the nurses. In one of these attacks he got into an automobile and attempted to start it. When asked to come out of the car and go to his room he became very profane and threw his cap and coat on the ground. After considerable persuasion he finally went to his room. When asked to undress and go to bed he stated that he was unable to make himself do this, that he was getting one of his ugly spells and that he could not control himself. He finally went to bed, but within a short while became noisy, unruly, pounded on the radiator with the soap dish, rattled the door, etc. He finally threatened to harm himself and the nurse. As he became more disturbed it was necessary to put him in restraint. He broke these, smashed the window and the water pitcher, was again put in restraint, gradually quieted down and fell asleep. He awakened the next morning apparently normal and apologized for his actions. He remembered every detail of what had happened. The duration of the attack was about fifteen hours. These attacks bore no relation to his grand mal seizures. In the interval he was normal and a very pleasant and co-operative patient. Because of these dangerous, recurrent attacks, it became necessary to commit him to a hospital for the insane.

Periods of depression, with all the features of a melancholia following an epileptic attack, are not infrequent. They differ somewhat from a true melancholia in that the depression is not so profound nor the state of inhibition so characteristic. Occasionally this condition is observed for a short time prior to the convulsive seizure. The following case is of this character and not only illustrates the depression but also an unusual and prolonged aura:

A girl, twenty years of age, came under observation because of peculiar attacks. Her family and personal history were negative. During the middle of one afternoon she suddenly became quite depressed without any apparent cause. She felt like crying, everything seemed gloomy, and she was very discouraged. The feeling of depression continued and she refused to eat her supper. While retiring, a sudden fear of impending danger came over her for about twenty minutes and then gradually subsided. She began to feel dizzy and attempted to sit up in bed. A small

marble statue of a beautiful person appeared in the room before her. It grew larger and larger, and finally floated toward her, as if it would crush her. She screamed for help, and by the time her sister had rushed upstairs to her room she had entirely recovered. About one month later she had a similar experience, which was followed by a generalized convulsion with involuntary urination. Within six weeks she developed another similar attack.

When one is unable to obtain any previous history of typical grand mal or petit mal it is sometimes quite difficult to arrive at a definite diagnosis of an epileptic equivalent. However, if one recalls the characteristics of this syndrome, namely, a sudden onset, no recollections of what occurs during the attack, and a rapid subsidence of the mental disturbance, frequently followed by a profound sleep, a fairly accurate diagnosis can be made. The following report with a most interesting mental picture is a fairly typical case:

A schoolboy, aged 10, was referred to me by Dr. Meyer, of Melrose, Minn., April 4, 1924, because of an acute mental disturbance. His family history was negative except that a maternal aunt had epilepsy and died in status epilepticus. The mother, a brother, and the patient talked frequently in their sleep, sometimes the greater part of the night. The patient's birth had been normal, and nothing of importance could be obtained in the personal history. Three years ago, while talking to his grandfather, he suddenly screamed, his expression became terrified for about one minute and then became normal. One year later he had a similar attack. On March 17, 1924, while picking up some grain in the barn another boy brought in a rope and told our little patient that unless he worked faster he would hang him, and proceeded to put the rope around the boy's neck. He became terrified and screamed. Within a minute he stiffened out. The mother, hearing his scream, rushed to the barn and found the youngster unconscious and rigid. He recovered in a very short time. After four hours he again met this boy and had a similar attack. After regaining consciousness he was confused, but was able to attend school the following morning. About two weeks later he had similar attacks, as many as three a day. These could be brought on by frightening or scolding him. In the interval he seemed normal. On April 2nd he appeared somewhat confused, acted terrified, requested his mother to remove the pictures of dogs and other animals from his room, because they frightened him. This condition continued until he was brought to my office. While there he would have periods during which he seemed terrified, and evidently had distressing hallucinations of sight, for he would cover his eyes and hide in the corner. At other times he became violent and would bite and scratch whoever attempted to restrain him. This continued for about one hour. During this time he had a short period during which he was quite rational and answered questions promptly and correctly. He was taken to Mounds Park Hospital and within an hour or so the attack subsided and he seemed normal except for some confusion. A diagnosis of epileptic equivalent was made. He was placed

on luminal and under hospital regime gradually improved. While at the hospital he had one generalized convulsion of short duration and several attacks during which he would suddenly fall, be dazed for a minute, and recover. The severity of these mental explosions gradually lessened. One day while visiting with him, his pupils suddenly dilated, his expression became terrified, he screamed and struck about with his arms, then gradually relaxed, fell asleep for several hours and awakened apparently normal. Most of his attacks were followed by a short period of sleep. He would be free from any attack for several weeks. During the interval his mentality was normal except that he seemed unduly affectionate and quite restless.*

Another interesting mental reaction following a series of convulsive seizures occurred in the following case:

A schoolgirl, ten years of age, was referred to me May 10, 1921, by Dr. H. Oerting, of St. Paul, because of epilepsy, grand mal type, and because of attacks of angioneurotic edema. She came from a neurotic family, but had a negative personal history. She had suffered from angioneurotic edema for two years and during the past six months had three grand mal seizures. She was placed on luminal. From May, 1921, till April, 1924, she had only one slight convulsion (February 14, 1924). She discontinued the luminal in March, 1924, and the following month she had four convulsions in one day, one of them occurring while eating her dinner. Following this she developed a fear that if she would eat or drink anything or would talk the convulsions would recur. For three days she did not take a bite of food or a drop of liquid or say anything but yes or no. After considerable persuasion she finally took a little food and some water, while the mother and I were in the room with her. Gradually this fear subsided and she ate and talked normally. However, her mother had to remain with her constantly for over one month because she would become terrified when left alone lest an attack should recur. She refused to leave her home, go for walks or play with other children. Her actions were slow; she required several hours to dress herself or eat a meal. She developed other phobias; she contracted a slight bronchitis with a cough and was convinced that she had tuberculosis. For a few days she was afraid lest she might die from some obscure disease, thought she had syphilis, or might get a stroke. She gradually improved and at present is apparently normal mentally. She has had no further convulsions. Her attacks of angioneurotic edema are continuing, fortunately without any terrifying effect to the patient.

The following case presented a very distressing mental attitude during the development of her epileptic dementia:

A girl, aged 14, who had suffered from frequent grand mal and petit mal attacks for six years, gradually deteriorated mentally. Associated with this she manifested undue jealousy towards her younger sister. She would strike and bite her. Several times she threw dishes at her, would threaten to kill her, and on one occasion attacked her with

a butcher knife. Fortunately her father was present and intervened or she would have seriously injured her. Towards her other playmates and strangers she showed no evidence of this. Under luminal medication her attacks became less frequent and she improved mentally for about one year. Her symptoms recurred and soon after it became necessary to remove her from her home because of the continued threatened attitude towards her sister. Her mental deterioration is progressing.

Epileptic automatism is usually grouped under the head of epileptic equivalents. This frequently occurs during the post-epileptic period and the patient unconsciously performs some unusual act of which he has no recollection afterwards. A discharged soldier, twenty-five years of age, walked out of a store where he had been shopping and had a slight convulsive seizure. He immediately got up, walked into the middle of the street, and proceeded to disrobe. After he was entirely undressed he suddenly seemed to realize what had occurred and ran for shelter. Except for this one attack he had manifested only grand mal seizures over a period of six years.

Another case, a young girl, aged fourteen years, was referred to me because of peculiar hysterical attacks which had occurred at irregular intervals. Her family and personal history were negative. Her mother stated that she had eight attacks during the past year. The patient answered questions promptly but during the course of my examination she developed one of her spells. She became restless for a few minutes, stared, her pupils dilated, she jumped up from her chair, ran to the corner of the room, danced a jig accompanied by bizarre movements of her upper extremities, gradually quieted down, her expression became normal, and she returned to her seat. She had no recollection of what had transpired.

Cases presenting dual personalities with periods of variable duration are frequently considered of an hysterical nature. However, some of these patients have been grouped under the epileptic equivalents and have been called true epileptic flights. The following case is illustrative:

A man, aged 34, was seen in consultation July 2, 1924, and gave the following history of three attacks. His family and personal history were negative. There was no evidence of grand mal or petit mal seizures. The first attack occurred in the spring of 1911 while working on the farm. He disappeared and ten days later suddenly came to and found himself at another farmhouse about one hundred and twenty miles distant. The farmer informed him that he had been there a week and had performed his work

*Since his return home he has remained perfectly well.

properly. He had been rather quiet, but apparently normal. The patient had no recollection of what occurred during the interval. In 1917 he enlisted, saw active front line duty without manifesting any nervous instability. His second attack occurred in the winter of 1920. He was found by some neighbors wandering through the fields in a heavy snow storm. He was dressed lightly, without hat or coat, and seemed confused. He had walked about six miles from home. He was taken home and his confusion gradually subsided. This attack was of about seven hours' duration. He remembered putting his team in the barn about 3 P. M. and had no further recollection until he found himself in bed about 10 P. M. His third attack occurred on March 10, 1924. He drove to town and sold a horse, evidently received a check for it, which he deposited. He remembers selling the horse, but has no recollection of getting a check or anything further until March 30. He suddenly came to and found himself in a depot in Chicago. His clothes were filthy, he had no funds. The station policeman told him that he had been sitting around the depot all day and had acted apparently normal. There was no evidence of any hysterical manifestation in his make-up.

These few case reports and brief gleanings from the literature offer nothing new but were gotten together at the request of several of the physicians who attended the clinic on epilepsy in the short post-graduate course this year where some of these patients were presented.

BIBLIOGRAPHY

1. Pollock: Arch. Neurol. and Psychiat., 1923, 9, 604.
2. Mingazzini: Arch. Neurol. and Psychiat., 1923, 9, 580.
3. Grünwald: Arch. f. exper. Path. and u. Pharmakol., 1909, 60, 249.
4. Buscaino, Schweitz: Arch. Neurol. and Psychiat., 1922, 11.
5. Patterson, H. A.: Amer. Jour. Psych., 1922, 2, 427.
6. Sargent, P.: Brain, 1921, 44, 312.
7. Wilson, S. A. K.: Jour. Am. Med. Assn., Dec. 29, 1923.
8. Terhune, W. B.: Jour. Am. Med. Assn., Oct. 14, 1916.
9. Reed, C. A.: Jour. Am. Med. Assn., May 20, 1916.
10. Clark, L. P.: Brain, 1920, 43, 38.
11. Osnato, M.: Arch. Neurol. and Psychiat., 1923, 9, 488.
12. Thom, D. A.: Arch. Neurol. and Psychiat., 1924, 11, 664.
13. Patrick and Levy: Jour. Am. Med. Assn., Feb. 2, 1924.
14. Patrick and Levy: Jour. Am. Med. Assn., Sept. 23, 1922.
15. Lewandowsky: Handbuch der Neurologie, 5, 859.
16. Brill: Textbook of Psychiatry, 1924, p. 449.
17. Bruce: Studies in Clinical Psychiatry, 1906, p. 164.

THE COMMON COLD*

F. W. BRIGGS, M.D.

Duluth

Medical literature of the last decade and more has contained an immense amount of fact and theory concerning foci of infection within the human body. That foci of infection have an intimate etiologic relation to systemic manifestation has been proven repeatedly by clinical and experimental evidence. Many diseases that previously were thought to be due to constitutional disturbances, idiopathic diatheses and dyscrasias are now understood to be complex manifestations of infection.

Primary focalizations of pathologic organisms within the body depend mainly upon two very important factors: (1) the amount and virulence of the invading germs, together with the time over which it extends; (2) the resistance offered by the body at the point of contact. There are other factors, to be sure, which have to do with the body becoming host to these organisms, but it is the resistance offered by the body at the point of contact to which I wish to call your attention.

The relation of persistent foci of infection to secondary manifestations, and to the predisposition to recurrent acute systemic infection is not so generally understood, especially in the upper respiratory tract. However, what I may say regarding this region and organs obtains in all the organs of resistance at the various openings of the body surface, where the skin and mucous membrane meet. W. Stuart Low has recently drawn our attention to the fact that at these vulnerable points of entrance into the body, barrier after barrier of lymphatic tissue have been lavishly and strategically placed—about the anus, vagina, urethra and the nasopharynx. Much confusion and misunderstanding, however, have arisen concerning the primary and secondary foci in the upper respiratory tract. That a primary focus of infection may, and very often does, exist with little or no symptoms is generally understood, and is doubly dangerous to the health and life of the individual, because of this fact. Thus a primary focus of infection within the nose is frequently overlooked and the part it has played is quite covered up by symptoms of pain and distress

*Read before the staff of St. Mary's Hospital, Duluth.

coming from an acute infection within a secondary focus. An inflamed tonsil or an aching tooth or a distressed and painful middle ear are certainly not always primary foci of infection.

In the vast majority of cases these are secondary to nasal infections, established early in life, which as the years pass become silent and chronic, hence easily overlooked in our search for a primary lesion. Thus secondary foci of infection along the pathways of the lymphatics leading from these areas, are often mistaken as primary.

In the open air, nasal infections are of small account in those with normal noses, and those who are already infected are greatly benefited and largely relieved of symptoms referable to the nose by life in the open. When men congregate in buildings nasal infections assume more serious importance, and those whose nasal anatomy is defective are the first to suffer. However, by the removal or treatment of secondary foci of infection resulting from this defective function of the nose, it is quite impossible to expect or to get any permanent improvement or lessen the patient's liability of becoming infected.

About the gallbladder have waged the storms of controversy whether to remove or to drain. Think you that the removal or drainage has much, if any, effect, on the distribution of germs and toxins from the source of infection of which it is a secondary focus.

If the tonsils and adenoids (as many believe) are the primary source of infection, their removal should stop nasal infections; but this is not true. If the teeth are primary, early treating and pulling should stop head colds, but this does not follow. Nasal infections are a distinct entity, and must be regarded as primary. Yet, during all our surgery, necessary and unnecessary, the nose and its dysfunction calls for no investigation on the part of the surgeon or internist. Mentioned in passing, but of momentary and trivial importance, "tonsils and nose negative." Yet, in a high percentage of cases there is a definite history of repeated nasal infections and head colds extending over months, and even years.

In the treatment of septic poisoning of the hand, the removal of the swollen and painful lymphatic glands of the axilla would be analogous to our present-day treatment of swollen and painful tonsils following a nasal infection, either acute or chronic. Tonsillar and adenoid infections are

usually the direct result of mouth breathing, as is also true of a large majority of diseases which enter the body by way of the upper respiratory tract. This relationship, which most certainly exists, is frequently overlooked, often because the patient or his medical advisor has accepted acute or chronic nasal infection as a more or less normal condition, unmindful of the fact that infections within the membranes of the nose are produced by the same germs in the same manner as though infection had entered through, and by way of, an abrasion in the skin. In order that any organ of the body develop and become of some use to its possessor, it must be used. How then can the nose develop and serve its purpose if periodically or constantly it is not used? Here, as in a petri dish, colonies of germs grow and elaborate their toxins, and here as elsewhere in the body anatomy does not develop because of this self-same reason. Hence, in the growing child who is a mouth breather, the nose fails to develop in direct proportion as it is not used and chronic infections result.

A wet nose is usually an infected nose and consequently largely a functionless organ, and is of little value to its possessor. The nose is an organ for warming, moistening, and cleaning the air we inhale. How then can it function or carry out this highly important service with its membranes bathed in mucus? Or in what manner can the nose function when the nostrils are blocked? Writers, for years, have drawn our attention to the defects of nasal drainage, but why speak of drainage in an organ that is designed to handle air? The observation that para-nasal sinusitis often results from a defective placing of the ostia of the sinuses is obviously incorrect, for the ostia of the sinuses are usually large enough and admirably adapted for ventilation, though very inadequate for drainage, which is an uncalled for function in the normal nose. Drainage operations on the nasal sinuses are sometimes necessary and efficient in pathologic conditions, but so long as drainage persists there can be little, if any, function. A seemingly insignificant nasal discharge that requires but little attention during the winter months is indicative of nasal infection. From this sort of a nose there can easily pass out germs and their toxins to almost any tissue of the body. Certainly, a nose of this type is of little protection to the individual so afflicted. In these cases, mouth breathing does not always obtain, the lower parts of the nose function-

ing, but in the upper and narrower areas liquids accumulate and here germs lodge and develop. From these same areas sinuses become infected which are most certainly secondary to the nasal infection. By drainage of these sinuses, little is ever accomplished of permanent value to the individual.

The prescribing of nasal sprays and douches, together with the employment of ointments and balms for the relief of nasal catarrh, shows appalling ignorance of the function of the nose, or a willful neglect of the principles by which this can be restored.

True it is that tonsils will ever have to be removed, mastoids opened and teeth filled and finally pulled, so long as our noses fail to functionate. For long before the tonsil or mastoid became infected, or the teeth became carious, long before an infected gallbladder gave symptoms of indigestion, or the appendix was the habitat of pathologic germs, that great primary focus of infection of the upper respiratory tract was dysfunctioning and had become the avenue by which these germs gained admission. I am not, however, unmindful of the fact that there are other sources of entrance into the body whereby pathologic germs may, and do, enter, but of the upper respiratory tract the nose is by far the greatest primary focus of infection.

The one great source of nasal infection in the infant is usually the common cold of the nurse or mother. So that our prophylactic measures must begin here. Other than this, abundance of fresh, clean air and life in the open will go far in preventing nasal infections. In the young child with nasal infection, and beginning dysfunction of the nose, the orthodontist is to be consulted early, in order that there may be developed and preserved for future usefulness the vital functions of this highly necessary organ of respiration.

In the adult, surgery of the nose, aside from providing temporary drainage to accumulations of pus, consists of the restoration of normal nasal function, insofar as it can be obtained with the means at our disposal, to the end that air shall freely circulate over and about the turbinates and have easy access to and from the sinuses. Other than this, surgery of this highly important organ is of small account, and merely temporizing.

Pyorrhea alveolaris may not be caused by nasal infections and mouth breathing, but without ques-

tion these are factors which prevent a normal hygiene of the mouth. Someone has said we are becoming the toothless nation; if this is true, we have long since become a noseless nation.

The intimate relationship there is between cause and effect in infectious diseases in the human body is well understood and is worthy of careful consideration. The surgeon or internist who is called upon to treat manifestations of infection within the body will often find a surprising return to health in the patient in whom he has removed or treated a primary focus of infection, and where this is not his concern, either by oversight or neglect, results will ever be disappointing.

That primary foci of infection are often silent, is a well demonstrated fact, and that secondary ones tend in the same direction must be borne in mind. Whenever we disregard the laws pertaining to physiology and normal function, when in our haste we are guilty of overlooking primary foci of infection, nature does not reverse the operation of her laws.

I have but two case records I wish to present at this time:

Mrs. R., aged 51. Present complaint: Nasal catarrh, deafness and discharging ears. The catarrh has persisted as long as she can remember and she has had her ear drums lanced repeatedly with little benefit. Operation: A submucous resection of the nasal septum was performed August 29, 1923. Result: Nasal respiration was re-established and conspicuous benefit to bodily health ensued. The discharge from the ears ceased. No home treatments were permitted. On May 5, 1924, the patient reported herself to be in wonderful health with no nasal or catarrhal trouble, her hearing having largely returned.

Mrs. S., aged 47. Present complaint: Marked deafness, slight nasal catarrh. Patient had scarlet fever at one and a half years of age and ears have discharged off and on since. On examination the patient was unable to hear a watch tick on contact. Operation: A submucous resection of the nasal septum was performed May 26, 1923. At the same time the middle turbinates were broken over. Recovery was uneventful. Result: On examination April 11, 1924, patient was able to hear a watch tick at seven inches with either ear. Nasal respiration had been largely restored. Her general health was greatly improved.

I have selected these cases at random, yet they are typical of this class of cases. Results are not all one could wish, but they have clearly demonstrated that in proportion as we are able to restore normal nasal function, we are able to relieve the patients of distressing symptoms, thereby enabling them again to take their place in society.

BLOOD CHEMISTRY STUDY IN OSTEOGENESIS IMPERFECTA—PRELIMINARY REPORT

ALBERT E. FLAGSTAD, M.D., ELIZABETH ZANGER
and LOGAN LEVEN, A.B.

St. Paul

A considerable amount of literature has been written on osteogenesis imperfecta since the coining of the name by Vrolik in 1845. The majority of these articles have dealt with the gross and microscopic changes in the bone, physical findings, hereditary influence, etiology and prognosis. In 1897 Griffith⁸ called attention to heredity, the age of onset and treatment. He collected 67 cases, 18 of which showed definite hereditary influence. The treatment was mostly experimental. In 1906 Lovett and Nichols¹¹ collected 123 cases. They found hereditary influence in 15 per cent of these. These men made a thorough study of the microscopic changes in the bone. Eddowes⁹ in 1900, Cameron⁴ in 1916, J. B. Alexander¹ in 1922, and H. Stewart¹⁰ in 1922, called attention to the blue sclera and parietal bosses. Cameron also emphasized the curvature and shortenings of the extremities, most marked in the proximal portions. Julius Hess⁶ made an extensive survey of the disease. He called attention to the hereditary factor which is especially more frequent in females. He also included a differential diagnosis of osteogenesis imperfecta, chondro-dystrophia fetalis, cretinism, mongolism, rachitis, infantile scurvy, syphilis, and tuberculosis of bones. In 1916 D. B. Phemister¹³ cited a case under observation four years which was benefited by the administration of phosphorus. The influence of the treatment was followed by x-ray studies of changes in the bone.

Regarding treatment, it is interesting to note that in 1897 Griffith called attention to the fact that it was mostly experimental. What was true then is true today concerning the real etiology and treatment of the disease, for very little progress has been made. Our treatment today is still in the experimental stage. Fortunately, however, the percentage number of cases is very little if any greater than thirty years ago.

In reviewing the literature we find repeatedly allusions to the description of the disease, its etiology, pathology, x-ray changes, and prognosis. We have found only one or two references to the blood

study in this condition. With this in mind a blood chemistry study has been made on these cases and compared with the findings in arthritis deformans, rickets, arthrogyroposis congenitalis multiplex and von Recklinghausen's disease.

The primary purpose of this paper is to emphasize this special phase of our study. We feel that, while the number of cases is small, the findings are quite conclusive. It will not be out of place to cite these cases briefly and in so doing call attention to the important factors in each case together with a blood chemistry study of the whole group.

In this paper four cases of osteogenesis imperfecta have been studied, all of which have been



Fig. 1 (Case 1). Showing changes of head, squareness, left parietal boss, deformity of left forearm and lower extremities.

under observation at least three years. During these years a great variety of treatment has been used, such as Alpine light, sun rays, calcium and phosphorus, bone meal, immobilization and supports. In spite of the variety of therapy and the greatest care, multiple fractures have occurred in these individuals, deformity has progressed and, at best, results have been unsatisfactory. Scott¹⁵

in 1916 reported calcium study in blood and urine of 100 cases of osteomalacia, all of which were in adults and were cases of true osteomalacia, which is very different from osteopenia imperfecta. Then, too, her method of study of the calcium content in blood has long since been discarded as too erroneous. Tisdall, Howland and Kramer¹⁷ reported a case of osteopenia imperfecta in which a study of blood calcium was made. Other than this work we have been unable to find references to a blood study in this condition.

CASE 1. A. R. Admitted State Hospital Aug. 5, 1921. Age 13 yrs.

Present complaint.—Bones break frequently.

Family history.—One brother, two half-brothers, two half-sisters, stepfather and mother, living and well; no tuberculosis or cancer; no family traits.

Social history.—Not much schooling because of fractures.

Past history.—Difficult birth; small baby; has had whooping cough, scarlet fever, occasional colds.

Present illness.—Broken bones in arms and legs numerous; began shortly after birth, last fracture July 12, 1923. At least three fractures before admission; one since then.

Physical examination.—Poorly developed; mentality retarded; has brownish pigmentation over body. Head: large, square, irregular parietal bosses above and slightly anterior to ears. Pupils react, sclera quite blue and prominent. Nose flat; mouth and tonsils negative; chest narrow, pigeon breast; spine negative; abdomen negative, except for atonia of muscles; upper extremities, mild deformity of upper one-third of right humerus from old fracture; lower extremities, marked lateral curve of upper third of right femur and fairly marked medial bow of tibia. Leg resembles letter S. Left femur, anterior and posterior curve, and marked knocked knee; tibia and fibula bowed medially.

Laboratory.—Wassermann negative. Blood and urine negative.

Course.—Patient has had three manipulations correcting deformities, the last two being osteoclasis. The bones break very easily, fractures being almost possible by hand. On April 29, 1921, patient broke right humerus while attempting to pull door open. Patient has been on bone meal, has had sun exposure, cod liver oil, but in spite of all therapy his bones remain brittle, and fracture and deformities occur easily. This case presents almost a text-book picture of osteopenia imperfecta.

CASE 2. A. O. Admitted State Hospital July 24, 1921. Age 2 years 9 months. Scandinavian extraction.

Present complaint.—Repeated fractures and deformities of extremities.

Family history.—No familial tendencies, one brother living and well, mother and father living and well.

Social history.—Born in Minnesota; father mechanic; home conditions good.

Past history.—Birth history negative, breast fed nine months, no childhood diseases, influenza in 1918.

Present illness.—At about four months mother became aware of something being wrong; child was restless and cried a great deal; head became large and square shaped;

developed pot belly. About this time, on very slight trauma sustained a fracture of right humerus, splinted eight weeks and then two months later refractured. In December, 1920, sustained third fracture of right humerus; March 1, 1921, sustained fourth fracture of right humerus;



Fig. 2 (Case 2). Showing deformity of extremities.

in December, 1920, mother noticed deformity of right leg due to fracture; on entrance right arm and forearm in splints and right tibia deformed.

Physical Examination.—Head square, large, irregular, parietal bosses present especially on the right; forehead flattened; fontanelles closed. Eyes, slight blueness of sclera, which are prominent; nose flattened; dentition delayed; neck and glands negative; chest, narrow, pigeon type, Harrison's groove present; heart and lungs negative; abdomen pot type, diastasis recti and general atonia of



Fig. 3 (Case 4). Showing square head, irregularity, flatness of nose, deformity of upper extremities, right clavicle, umbilical hernia, relaxation of the abdominal wall.

abdominal muscles; g. u. negative; upper extremities, marked bowing of both arms confined to humerus. Since patient has been in hospital she has had several fractures of left and right humerus. Deformity of the right clavicle

from old fracture. Lower extremities, marked anterior and slight lateral bowing of right tibia. June 23, 1923, wedge was removed from right tibia to correct deformity and leg remained corrected as long as held in retention apparatus but on removal of support deformity recurred.

Laboratory.—Wassermann, negative. Blood and urine negative.

Course.—December 21, 1921, reduction of fracture of right fibula and tibia. June 23, 1923, osteotomy of right tibia. February 13, 1924, reduction of fracture of clavicle. A number of other fractures have occurred, particularly in the humeri. Retention apparatus has been applied. There seems to be very little pain associated with the fractures. On February 12, 1924, nurse making night round, found patient crying; she complained of pain over right clavicle. X-ray picture revealed a fracture which apparently was sustained in rolling over onto the right side during sleep. The deformity of the right tibia can be corrected by hand

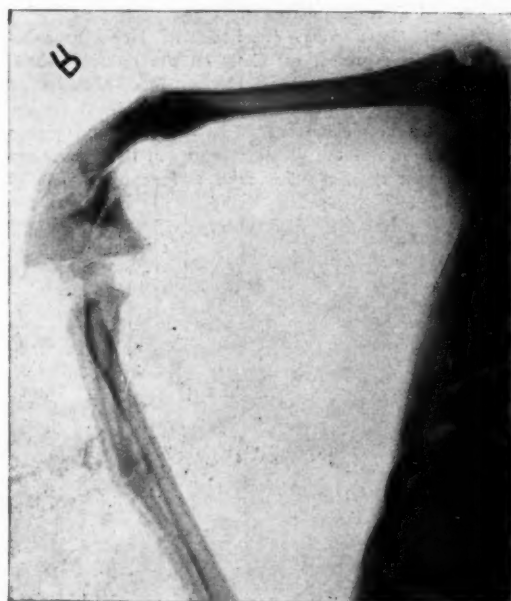


Fig. 4 (Case 2). X-ray of the right arm and forearm showing multiple fractures, also fractures of several ribs.

but it recurs almost immediately on removal of support. Patient has a marked atonia of all muscles, especially of the abdomen. Only recently she has had several very severe prolapses of the rectum. Patient has been on phosphorus, sun exposure and other therapy with little if any benefit.*

CASE 3. I. T. Admitted to State Hospital January, 1921. Age, 15 years.

Present complaint.—Deformities of both lower extremities.

Family history.—Father and mother living and well; five brothers and sisters living and well; one sister similar trouble, otherwise negative.

*Blood chemistry was made and blood values were within normal limits.

Social history.—Born in Minnesota, Scandinavian extraction, home conditions fair.

Past history.—Influenza 1920, otherwise never sick except present illness.

Present illness.—Deformities of extremities noticed shortly after birth. Right femur fractured six years ago; no other fractures; deformity of right knee more marked since fracture; has never walked.

Physical examination.—Undernourished and underdeveloped; head fairly large, somewhat irregular, slightly prominent temporal regions; eyes negative, sclera fairly prominent; nose prominent, not flat; neck negative; chest, heart and lungs negative. A large mass was felt in the lower left and right quadrants not tender. This later demonstrated to be feces, has megalocolon with situs transversus. Upper extremities, shoulder muscles good; flexion deformities of both arms about forty degrees; lower extremities; marked flexion deformities of hips and knees; marked anterior bow of both femurs confined to middle and upper one-third; rectal examination reveals marked deformity of pelvis; sacrum and pubis almost in contact; pelvic outlet about two and one-half inches. X-ray of intestinal tract shows situs transversus, sigmoid in right iliac region and markedly dilated.

Laboratory.—Wassermann, negative. Urine and blood negative.

Course.—This patient has been manipulated several times, has been on heliotherapy and bone meal; in spite of therapy, deformities recur and progress is very slow.

CASE 4. A. T. Admitted State Hospital in 1922. Age 7 years. Sister to Case 3, I. T. First seen at office October 19, 1922.

Present complaint.—Inability to walk, deformity of right leg.

Family history.—Same as Case 3.

Social history.—Same as Case 3.

Past history.—Negative.

Present illness.—Has never walked especially well, but since last summer she has not been able to walk at all; she complained of some pain in region of right hip; no history of injury; leg has become bent and shorter than left.

Physical examination.—Eyes, ears and nose negative; chest, slight Harrison groove; heart and lungs negative; abdomen negative; upper extremities negative; spine negative; lower extremities, right leg is smaller throughout than left and one inch shorter; fairly marked bowing of femur and a large callus can be palpated in region of trochanter major; left leg negative. January 19, 1921,* patient was operated upon, subtrochanteric osteotomy (Ghant), cast applied and later several other casts were applied. After a series of casts, leg began to adduct again; about this time developed slight bowing of left tibia. X-ray taken and showed several green-stick fractures. December 9, 1921, x-ray of radius and ulna revealed several fractures. In spite of supports, phosphorus and glandular therapy patient's deformities and fractures continued. In summer of 1922 patient was admitted to State Hospital. Since her stay here she has had several fractures of right femur below site of old Ghant; she also developed marked coxa vara of the hips, especially the right; as soon as patient bears weight deformity follows. Therapy has had little or no beneficial effects.

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BLOOD ANALYSIS

A number of determinations were run on three cases of osteogenesis imperfecta, arthritis deformans (2 cases), arthrogyroposis congenitalis multiplex (1 case), rickets (1 case), and von Recklinghausen's disease (1 case). The Folin and Wu⁷ system was used in determining sugar, and nitrogenous constituents, including non-protein nitrogen, urea and creatinine. Other methods used included: Benedict's² for uric acid, Clark's⁵ for calcium, and that of Benedict¹² for the determination of phosphorus. Duplicates were run in all cases where the amount of serum permitted.

In the diseases cited above, excepting rickets, there appears to be no significant change in the phosphorus content of the blood, allowance being

In the three cases of osteogenesis imperfecta, the phosphorus and calcium were again determined after the patients had been put on a bone meal diet for a period of one month. There was some variation in the phosphorus content, but no significant increase.

The values for uric acid, creatinine, urea, total non-protein nitrogen, and sugar were within normal limits. Although the urea and total non-protein nitrogen values were, on some occasions,



Fig. 5 (Case 2). X-ray of the right leg showing numerous fractures.

made for the age of the patient and regarding the normal values to be 5 mg. per 100 c.c. serum for children and 3.7 mg. per 100 c.c. serum for adults. In the case of rickets (No. 7), two determinations on blood taken at different times showed low phosphorus values consistently.



Fig. 6 (Case 3). X-ray showing marked curve of the femur and green stick fracture in the lower third.

higher than usual, it could not be regarded as a retention.

Numerous clinical reports of osteogenesis imperfecta are recorded in the literature but very little work has been done on blood analysis. Metabolism experiments in cases of osteogenesis imperfecta by Schwarz and Bass¹⁴ showed nitrogen, calcium, and phosphorus metabolism and fat absorption normal.

Bookman³ found a subnormal calcium retention in three cases of osteogenesis imperfecta.

R. O. Klercker¹⁰ obtained results similar to those of Schwarz and Bass.

As the result of numerous experiments, Tisdall,

Howland and Kramer¹⁷ found that the calcium concentration in serum of children is constant and only altered in two conditions: (1) tetany, and (2) kidney insufficiency with or without nephritis. They found the calcium concentration normal in osteogenesis imperfecta.

SUMMARY

1. In this series were two male and two female cases.
2. Two patients were observed to have characteristic sclera and parietal bosses.
3. Heredity plays a rôle in the series; brother and sister affected.
4. All fractures were of the green-stick variety, and proximal portions were most often affected. Union as a rule was good.

the use of sun and Alpine light, supports when needed, and the prevention and correction of deformities.

REFERENCES

1. Alexander, J. B.: Brit. Med. Jour., April 29, 1922, 1, 677.
2. Benedict, S. R.: Jour. Biol. Chem., 1922, 54, 233.
3. Bookman: Am. Jour. Dis. Child., Dec., 1914, 7, 436.
4. Cameron, H. C.: Proc. Roy. Soc. Med., 1916, 9, 43.
5. Clark, G. W.: Jour. Biol. Chem., 1921, 48, 487.
6. Eddowes, Alfred: Brit. Med. Jour., July 28, 1900, 222.
7. Folin and Wu: Jour. Biol. Chem., 1919, 38, 81.
8. Griffith, J. P. C.: Am. Jour. Med. Sc., 1897, 113, 426.
9. Hess, Julius: Arch. Int. Med., Feb., 1917, 19, 163.
10. Klercker, R. O.: Monatschr. f. Kinderh., Mar., 1923, 25, 338.
11. Lovett, R. W., and Nichols, E. H.: Brit. Med. Jour., 1906, 2, 915.

| Case | Age | Sex | Date | Diagnosis | BLOOD ANALYSIS MG TO 100 CC | | | | | | | Remarks |
|------|-----|-----|------|---------------------------------------|--------------------------------|---------|-------|---------------|--------|------------|-----------|----------------|
| | | | | | Phos-phorus | Calcium | Sugar | Non protein N | Urea N | Creatinine | Uric Acid | |
| 1 AR | 16 | ♂ | 4/24 | Osteogenesis imperfecta | | | 116.5 | 22.4 | 135 | 14 | | |
| | | | 5/22 | | 4.27 | 12.12 | | | | | | |
| | | | 6/2 | | 3.90 | 11.30 | | 36.6 | 12.6 | | | Bone meal diet |
| 3 IT | 19 | ♂ | 4/24 | | | | 86.3 | 25.6 | | 1.7 | 2.5 | |
| | | | 5/15 | | 5.03 | 12.32 | | | | | | |
| | | | 5/22 | | 4.16 | 11.73 | | | | | | |
| | | | 6/4 | | | 11.80 | | | 15.9 | | | Bone meal diet |
| 4 AT | 9 | ♀ | 4/19 | | | | 85.0 | 37.5 | 20.4 | | | |
| | | | 5/15 | | 5.20 | 11.04 | | | | | | |
| | | | 6/4 | | 6.36 | 12.60 | | | | | | Bone meal diet |
| 5 HS | 13 | ♀ | 5/15 | Arthritis deformans | 5.00 | 9.83 | | | | | | |
| 6 OR | 19 | ♂ | 5/8 | | | | 92.9 | 51.2 | | 2.5 | 2.2 | |
| 7 CM | 11 | ♂ | 5/1 | Arthrogryposis congenitalis multiplex | | 11.67 | 94.7 | | 19.7 | 1.2 | 2.3 | |
| 8 VL | 10 | ♀ | 5/8 | Rickets | 3.39 | 10.17 | 92.7 | 43.9 | 13.0 | 2.5 | 2.3 | |
| | | | 5/22 | | 2.95 | | | | | | | |
| 9 VT | 18 | ♂ | 5/8 | von Recklinghausen's disease | | | 83.8 | 36.6 | 13.4 | 2.7 | 2.0 | |
| | | | 5/22 | | 4.80 | 12.71 | | | | | | |
| | | | 5/29 | | 4.46 | | | | | | | |

Fig. 7. Chart of blood chemistry findings.

5. There is comparatively very little pain associated with fracture.
6. Blood chemistry study reveals normal calcium and phosphorus values; sugar, total non-protein nitrogen, urea, nitrogen, creatinine and uric acid within normal limits.
7. Bone meal in diet caused no variation in blood values.
8. The treatment of this condition consisted in

12. Meyer, V. C.: Analysis of Blood (A Private Communication).
13. Phenister, D. B.: Jour. Am. Med. Assn., June 8, 1918, 70, 1737.
14. Schwarz, H., and Bass, M.: Am. Jour. Dis. Child., Feb., 1913, 5, 131.
15. Scott, A. C.: Indian Jour. Med. Research, July, 1916, 4, 169.
16. Stewart, H.: Brit. Med. Jour., Sept. 16, 1922, 2, 498.
17. Tisdall, Holland and Kramer: Am. Jour. Dis. Child., Dec., 1921, 22, 560.

MINNESOTA MEDICINE

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SOUTHERN MINNESOTA MEDICAL ASSOCIATION, NORTHERN
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APOLIS SURGICAL SOCIETY

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EDITING AND PUBLISHING COMMITTEE

R. E. FARR, M.D. JOHN M. ARMSTRONG, M.D.
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EDITORIAL OFFICE

CARL B. DRAKE, M.D., Editor
402 Guardian Life Bldg., Saint Paul

BUSINESS OFFICE

J. R. BRUCE, Business Manager
402 Guardian Life Bldg., Saint Paul
Telephone: Cedar 1683
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Telephone: Atlantic 2716

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VOL. VII DECEMBER, 1924 No. 12

EDITORIAL

Medical Meetings in 1925

At a meeting November 14, at the Nicollet Hotel in Minneapolis, called by Dr. Burnap, president of the Minnesota State Medical Association, representatives of the Northern and Southern Minnesota Medical Associations, the Hennepin and Ramsey County Medical Societies and the Tri-State District Medical Association met and discussed the correlation of medical meetings as to time and place. The co-operation shown at this meeting was most satisfactory. As a result of the discussion, the 1925 state medical meeting is to be combined with Minneapolis Clinic Week and will be held in Minneapolis the last week in April or the first week in May. The date has been advanced from fall to spring so as to avoid conflict with the Interstate Post-Graduate Assembly of the Tri-State Medical Association, which will meet next year in St. Paul, the week of October 26th. This meeting, which is the outgrowth of the Tri-State Association, has, in a way, supplanted the clinical meetings of the Southern Minnesota Medical Association and has shown

a phenomenal growth under the management of Dr. Peck of Milwaukee. Originating as a tri-state meeting, including the states of Illinois, Wisconsin and Iowa, this convention has expanded until now it includes some twenty-two states and its yearly post-graduate course of a week offers clinics to the profession conducted by University professors or associate professors of the highest grade attainable. That the clinics are appreciated is attested by the large attendance at the recent meetings, over 2,700 physicians being registered at the Milwaukee meeting the last week in October. Those who attended the last meeting were for the most part on hand at 7 A. M. and the evening sessions, which lasted usually until 10 P. M., were well patronized. Minnesota is fortunate in having the meeting next October. The Auditorium is ideally adapted for such a large meeting, the large stage affording a sufficient area for exhibits.

One such large clinical meeting being scheduled for St. Paul in 1925, it was deemed advisable to omit the annual St. Paul Clinic Week for next year. The combination of Minneapolis Clinic Week and the state meeting in Minneapolis in the early spring is a happy solution of the division of these two large meetings as to time and place.

The Northern Minnesota Medical Association is scheduled for Brainerd in July, 1925, and the annual meeting of the Southern Minnesota Medical Association, which has been tentatively set for May, will doubtless be changed so as not to conflict with the state meeting.

Minneapolis is to have the National Tuberculosis meeting, June 15. Tuberculosis specialists from all over the United States and Canada are expected to attend the meeting of this national organization.

Minnesota is, so to speak, on the medical map for 1925.

Association Affairs

The Minnesota State Medical Association has shown a steady growth in membership during the last few years, until now we number close to 2,000 members. This places us in the list of the larger state associations.

It is high time that the affairs of our Association were placed in the hands of a member of the profession who is not occupied with the demands of private practice. The argument for a full time

secretary is well presented in a communication which has been sent to each county society secretary by the committee of those appointed by the Council and House of Delegates to investigate and act in the matter. This communication appears elsewhere in this number of MINNESOTA MEDICINE. The subject is a live one and should be discussed by the component societies of our State Association, and the matter of an increase in association dues to meet the increased expense of such a step should not be allowed to drop, but should be acted upon by the House of Delegates at our spring meeting.

A step in the right direction has been taken by the appointment of Dr. E. A. Meyerding, the present executive secretary of the Minnesota Public Health Association, as executive secretary of the Minnesota State Medical Association. He was chosen by the special committee of those above mentioned and his appointment was confirmed by the Councilors present at the meeting called at the Nicollet Hotel in Minneapolis, November 14th. Dr. Meyerding is directly responsible to the Council, receiving his appointment by the Council rather than being elected yearly by the House of Delegates. MINNESOTA MEDICINE offers to Dr. Meyerding its closest co-operation in the furtherance of the work of the Association.

Dr. Everett Geer of St. Paul has been appointed general secretary of the Association for 1925 to replace the present secretary, who again tendered his resignation, effective January 1, 1925.

The death of Dr. F. L. Beckley, treasurer of the Association, necessitated the appointment of his successor. The choice of the Council fell upon Dr. Earle R. Hare of Minneapolis, who through his former secretaryship in the Association is particularly qualified for the position.

A new era in the history of the Association is about to be entered upon and with the co-operation of all our members it should prove to be one of distinct progress.

Increasing the State Society Membership

No one should need to be convinced that every eligible physician should be enrolled in our state society. If there was not the obvious incentive that strength comes with numbers, and mutual advantage with completer contact, we might mention the larger circulation of the Journal, its better resul-

tant advertising rates, and the general lessening of overhead. Presently there is the prospect of getting into line with other states who have secured a properly qualified, whole-time secretary, for their association. With our own membership considerably increased, this would be easier of accomplishment.

Such beneficial increase can only come through direct effort on the part of the officers of our local societies, aided, possibly, by some incentive from our central body. Just what form this should take is a problem for someone to work out. Nevertheless, an analysis of last year's gain of sixty-eight members in the state association is of interest when contrasted with the turn-over of memberships in the St. Louis County Medical Society alone. Secretary Magney reported in November, 1924, that St. Louis County showed a total gain of twenty-six for the year, and a loss of six from death, change of location, etc., leaving a net gain of twenty, or just about thirty per cent of the gain for the entire state. This, even for a large county, is a splendid showing, and due almost entirely to the efforts of the secretary and the very efficient chairman of the special Membership Committee.

This is written to point the way for others to help out in the ultimate increase in our state membership. Make the County Society meetings worth while; make it disadvantageous for any qualified man to either stay out or away.

E. L. T.

MISCELLANEOUS

STATE SECRETARYSHIP

The following letter has been sent out to the secretary of each county society and deals with the matter of a full time secretary for the State Association. Members of the profession are urged to read this to familiarize themselves with this matter.

To the Secretaries of the County Medical Societies:

At the recent meeting of the State Medical Association at St. Cloud a committee from the Board of Councilors was empowered to secure a full-time secretary, with the stipulation that it should be done without immediate increase in the present annual dues. Since it is manifest that the expense incurred will necessitate a slight increase in dues in the future, the House of Delegates believed it advisable to bring the matter up for consideration before the County Societies.

It has been the experience of the seven state associations which have already adopted the plan of having a full-time

secretary that the benefits to the profession derived from this change more than compensate for the increase in dues. We have written to several state associations now employing a full-time secretary, and the answers received are unanimous in approval of the plan. Doctor West, Secretary of the American Medical Association, strongly urges that every state association with a membership of 1,400 or more should have a full-time secretary. He says, furthermore, "There can be little doubt that the association whose business receives the attention of a competent full-time secretary, with that business his only concern, will have decided advantages and will maintain more efficient organization than that one whose executive officer must, of necessity, devote most of his time and energy to his own personal affairs."

In order to meet the demands for better organization of the medical profession for the purpose of solving the various problems confronting us, in order to elevate the standards of our profession, and in order to stimulate co-operation and education of the laity in matters of public health, it will be necessary to employ a man who can devote his entire time and energies in order to accomplish the best results.

I. *State Organization.*—Although the profession in the state is fairly well organized, and much credit should be given to the officers of this association who have helped to make it so, nevertheless, increased organization and closer co-operation are necessary to solve the numerous problems bearing upon the welfare of the profession which are continually arising. According to a recent estimate, there are approximately 600 licensed physicians in Minnesota who are not members of the State Association. In several counties the meetings of the county societies have been allowed to lag and have not maintained the standard which they should. It is evident that a man who could devote part of his time to visiting the various county societies could be of great help to them. By means of personal contact, issuing of bulletins, etc., the work of the individual units would be greatly furthered. Their members would be kept informed as to proposed and passed laws affecting the practice of medicine, as well as on other matters with which they should be familiar.

II. *Closer Co-operation* in the movement to instruct the public in matters pertaining to health. Although we have identified ourselves with several organizations which are ably conducting health instruction campaigns, a closer co-operation on the part of the organized profession would be desirable. In order to bring this about, it would require considerable time and effort and the establishment of an office representing the state association. Active supervision of the increasingly important method of public instruction by means of the radio would come under the province of this office, and would alone require much time and energy in order that the right men should be selected and also that the method would not be subject to ethical criticism.

III. *The Matter of Supervision of Legislation.*—Although this has been ably done by the Committee on Legislation in the past, according to the report read at the last meeting by the committee, they advise securing a man who can devote his entire time to this all-important work. It is easily conceivable that no man who is engaged in private practice can devote the amount of time necessary to successfully carry on this work.

IV. In keeping with the other progressive states, at the recent meeting of the House of Delegates it was recommended that steps should be taken to establish a system of post-graduate education which would be carried to the various centers throughout the state. Similar methods of organized post-graduate study have proven successful in other states. The program includes a schedule of lectures and clinics on live subjects by recognized authorities, to be given in various portions of the state. In this manner the members of the profession are enabled to attend these lectures with a minimum loss of time and expense. In order to carry out this plan, it would be necessary for the state association to be represented by some official who would have sufficient time to keep in touch with the countless details involved in its successful development.

It would be the secretary's duty to secure close co-operation with all of the organizations in the state which are interested in health problems, such as the Bureau of Vital Statistics, State Medical Board, State Nursing Association, Minnesota State Board of Health, Minnesota Health Association, etc. It has long been felt that there should be a closer co-operation between such departments and medical activities carried on in this state. Not only is this desirable from the standpoint of efficiency, but also from the standpoint of economy.

Among the many other functions that a full-time secretary may assume are the following:

As a permanent and full-time officer, he would have the time and experience to be of much assistance in arranging and selecting the scientific program at Annual Meetings. Although most of the committees appointed are conscientious in the discharge of their duties, in many instances they could be made more efficient through the co-operation and stimulus of a full-time secretary. There are other details, too numerous to mention, which only a full-time secretary can successfully handle.

We are sure that every member of the State Medical Association will be back of this movement, which promises much for the benefit of our profession. Our Association has always been known for its progressiveness and it cannot afford to lag behind in the pace set by surrounding states.

Respectfully,

H. M. WORKMAN,

CARL DRAKE,

W. F. BRAASCH, Chairman,
Committee.

THE GORGAS MEMORIAL

During the past year, throughout the United States, the work of organizing the Gorgas Memorial State Governing Committees has been progressing. In some states the response has been most enthusiastic, while in others considerable effort has been necessary to bring home to the doctors the importance of this movement to them, individually and collectively. Inasmuch as the Gorgas Memorial is primarily a medical movement and as such must have the united support of the profession if it is to make the proper impression on the general public, we take this occasion to outline briefly the Gorgas plan and to request the co-operation of our colleagues in bringing to a successful issue this national health program.

We are planning to establish a Memorial for our former chief, Major General William Crawford Gorgas, not of marble or bronze, but a permanent living organization in the form of a great health foundation typical of his work in research and curative medicine, that will unite laymen and doctors in an intelligent effort to obtain better personal health—a health guild that will be supported and directed by the representatives of curative medicine.

The Gorgas Memorial consists of two phases:

1. An Institute in Panama for research in tropical diseases.
2. A health educational program in the United States and other countries that wish to co-operate and participate in the movement.

We are living in an age when people are knocking at all doors of knowledge and demanding that they be admitted. In the field of medicine who are so well fitted to meet this demand as those actually engaged in the practice of medicine? The doctors have a far more interesting and important message to deliver than any other group.

In the United States today there is scarcely a community that has not its quota of irregular "medical practitioners," so-called. In many states there are strong organizations of the representatives of the various cults, whose theories are imposed upon an uninformed public. Public ignorance is encouraged by professional reticence and the result is the astounding growth of unscientific methods. If the profession is to maintain the high standing to which centuries of labor in behalf of suffering mankind entitles it, it is essential that a definite organized effort be made to familiarize the public with such facts as will impress upon it the importance of medicine's contributions to human welfare. A constant fund of proper health information through the newspapers, magazines, lectures, moving pictures and the radio, furnished by medical men and women of known reputation and standing, will direct the public to the proper source for medical advice and gradually eliminate the irregular practices constantly increasing.

One of the objects of the Gorgas Memorial is to furnish a channel through which this kind of information may be disseminated. It cannot be done by individual physicians. It must be conducted by a dignified, ethical organization, controlled by the medical profession. The name of Gorgas is synonymous with "better health." No more appropriate name could be adopted for a movement that has for its object *the development of co-operation between the public and scientific medicine for the purpose of improving health conditions by implanting the idea in the mind of every individual that scientific medicine is the real authority in all health matters and as such should be recognized as the source of health instruction.*

Before we ask the public for financial and moral support, it is essential that the doctors of the country unite in support of this program. As a means to this end, Governing Committees are now in process of organization, on the basis of 100 members to every 1,000,000 population in each state. Seventy-five per cent of the personnel of each Committee will consist of medical men and 25 per cent of influential laymen and women. The permanent activities of the organization will be supervised by these Committees in their respective states, in co-operation with the National Executive Committees.

An organization cannot operate without funds. We are endeavoring to raise an Endowment of \$5,000,000, the interest only of which will be utilized to carry on the work. The principal will be invested in trust securities and remain intact. None of the money thus obtained will be spent for buildings or equipment. The Republic of Panama has donated the site and guaranteed the initial buildings and equipment for the tropical research laboratories, in recognition of Gorgas' great work in Panama. Those invited to serve as Founder members of the State Governing Committees are requested, as they accept membership on the Committee, to subscribe \$100 to the Endowment Fund, payable within two years. Every individual on the State Committee is a contributing member. When the medical nucleus of the organization is complete, a general appeal for funds will be made to the public.

The American Medical Association, at its recent meeting in Chicago, passed the following resolution:

"RESOLVED, That the House of Delegates of the American Medical Association, convinced of the great promise which the Gorgas Memorial contains of benefit to humanity through improved knowledge of preventive medicine and tropical disease, and of its peculiar adequacy, as a tribute to our great leader and sanitarian, recommend to the organized profession of the country, through its constituent state and county societies, the enthusiastic support of the project."

J. A. WITHERSPOON, Tennessee,
JOSEPH RILUS EASTMAN, Indiana,
THOMAS CULLEN, Maryland,
W. H. MAYER, Pennsylvania,
F. B. LUND, Massachusetts.

The Memorial has also been endorsed by numerous other medical and civic organizations.

Every doctor is requested to take a personal interest in the Gorgas program and to see that his community is adequately represented on the State Governing Committee. Each County Society should appoint officially at least one of its members to serve on the State Committee. This is one foundation that is controlled by the practitioners of curative medicine and as such should be supported by every practicing physician. Let us pull together, "the doctor for the doctor."

FRANK BILLINGS,
GILBERT FITZPATRICK,
SEALE HARRIS,
W. H. G. LOGAN,
SAMUEL J. MIXTER,
G. H. DE SCHWEINITZ,
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BRIGADIER GENERAL ROBERT E. NOBLE,
GEORGE DAVID STEWART,
HUGH YOUNG,

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Samuel Gompers.

W. P. G. Harding.

Judge John Bassett Moore.

Adolph S. Ochs.

President Beliasario Porras, Panama.

Leo S. Rowe.

Fred W. Upham.

RED CROSS SEALS

Minnesota's seventeenth annual campaign to raise funds for the 1925 campaign against tuberculosis through the sale of Christmas Seals is now on. In every corner of the state an intensive health educational and fund-raising campaign is in progress. Physicians of the state, who have always been among the most enthusiastic boosters for the Christmas Seal, are enlisted in large numbers in the huge army of volunteer workers. The officers of the state association are: Dr. H. Longstreet Taylor, St. Paul, president; Dr. N. O. Pearce, Minneapolis, vice-president; Mrs. J. A. Thabes, Brainerd, secretary; and W. A. Laidlaw, St. Paul, treasurer. Dr. E. A. Meyerding, St. Paul, is executive secretary.

The Northwestern Health Journal, which was recently endorsed and highly praised by the Minnesota State Medical Association at its annual meeting, is one part of the educational program made possible through the penny Christmas Seals. The 1924 activities of the Minnesota Public Health Association also included the distribution of more than 220,000 pieces of health literature on various subjects; physical examination of more than 4,000 children, a large number of whom were referred to family physicians for treatment of previously-unsuspected bodily disorders; 36 tuberculosis clinics; the enlistment of 40,000 children in the Modern Health Crusade; the planning and display of health exhibits and the services of a Health Clown at county fairs and at the state fair; the partial support of public health nurses in nine counties; health lectures in 44 counties; and an extensive newspaper publicity campaign.

Special educational campaigns for periodic physical examinations, early treatment of physical defects and more abundant use of fresh air were also included in the year's work.

"Buy and Use Christmas Seals" is the clinic slogan for this year, and it is hoped that every letter, Christmas card and package will carry one of the little "for health" stamps.

OBITUARY

DR. HORACE GREELEY MURDOCK, 1858-1924

Horace Greeley Murdock was born at Rensselaer Falls, St. Lawrence Co., New York, on January 10, 1858. He was the son of Dr. Thaddeus and Lucinda Allen Murdock and was the youngest of nine children.

He attended school at Rensselaer Falls and Gouverneur, N. Y., and later went to Oberlin College. He taught school between school sessions for two terms and also studied law a short time but finally decided to follow in the footsteps of his father, three brothers, two uncles and two cousins who were physicians. He entered Rush Medical College, Chicago, and graduated from there Feb. 22, 1881.

He practiced medicine at Glenwood, Minn., for two years.

On Oct. 20, 1881, he was married to Luella M. Daubney, of Taylors Falls. Three children were born to them; Earl, the oldest, was drowned in the St. Croix river, but two daughters survive him. Mrs. Murdock died Sept. 26, 1913.

On January first, 1883, he bought out his brother, Dr. A. J. Murdock, at Taylors Falls, Minn., and practiced there until November, 1919, when he was obliged to give up his work. He worked day and night during the "flu" epidemic and after it was over collapsed. He had been a great sufferer from rheumatism for twenty-five years but in spite of it continued his life work.

On March 31, 1923, he was married to Frances W. Folsom, of Taylors Falls.

He was confined to his home for the last five years of his life but always took a deep interest in the people of the community and many went to him for advice. He had always been a great reader and was deeply interested in all affairs of the day, at home and abroad.

When he first practiced at Taylors Falls there were only three doctors within a radius of forty miles which necessitated long drives in cold and wet weather. He often kept five or six driving horses. The coming of the auto meant much to him.

He died at his home at Taylors Falls, August 3, 1924, of angina pectoris, after a severe illness of two weeks' duration. He is survived by his widow, Frances F. Murdock, two daughters, Beatrix M. Davidson, of Duluth, Minn., and Fannie M. Dike, of Rio Linda, California, and one sister, Mrs. Flora M. Doty, of Rensselaer Falls, New York.

He served as president of the Chisago-Pine County Medical Society for several years. He belonged for many years to that society and also to the Minnesota Medical Association, American Medical Association and the Soo Surgical Association.

He was a member of Zion Lodge A. F. & A. M. at Taylors Falls, and was also a member of the Modern Woodmen of America.

Five Dr. Murdocks practiced at Taylors Falls: Dr. Henry Murdock, a cousin; Dr. Hiram Murdock, an uncle; Dr. George Murdock, a cousin; Dr. A. J. Murdock, a brother; and Dr. H. G. Murdock.

DR. FREDERICK LEE BECKLEY

Dr. F. L. Beckley, widely known St. Paul physician, and president of the Minnesota Transfer State Bank, died at 12:40 P. M. Thursday, October 23, 1924, at St. Joseph's Hospital, following a short illness. He was 53 years old. Dr. Beckley had been in a critical condition since an operation performed the previous Friday.

Dr. Beckley was a native of Minnesota and spent his early boyhood at Paynesville, where he was educated in the public schools. After deciding to follow the medical profession, he entered the University of Minnesota, where he worked his way through the Medical College and was graduated in 1897. After graduation he became associated with Dr. S. G. Cobb, with whom he had lived while at the University. Five years ago Dr. Beckley opened offices with Dr. John Ryan at Prior and Roblyn avenues, St. Paul.

Dr. Beckley was well known as an ardent golfer and was president of the Town and Country Club in 1922-23. He also was a member of the St. Paul Athletic Club, of St. Paul Lodge No. 3, A. F. & A. M., and a Shriner.

Surviving Dr. Beckley are his widow, a brother and sister in California, a brother in North Dakota, and a nephew, Dr. Chester Roche of St. Paul.

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

MINNESOTA PUBLIC HEALTH ASSOCIATION

At the annual meeting of the Minnesota Public Health Association held in St. Paul, November 6, Dr. H. Longstreet Taylor, St. Paul, was re-elected president; Dr. N. O. Pearce, Minneapolis, vice-president; Mrs. J. A. Thabes, Brainerd, secretary; and W. A. Laidlaw, St. Paul, treasurer. Directors were elected for the regular three-year terms.

Dr. E. A. Meyerding, executive secretary, reported the distribution of more than 220,000 pieces of health literature, free physical examinations given to more than 4,000 children, the holding of thirty-six tuberculosis clinics, free lectures in forty-four counties, and public health nursing service in nine counties.

LYMANHURST AND PARKVIEW STAFF MEETING

The regular monthly meeting of the Lymanhurst and Parkview medical staffs will be held at Lymanhurst School, 1800 Chicago Avenue, Minneapolis, Tuesday evening, December 23, at 7:00 o'clock.

Following is the program for the evening:

"Anesthesia in the Tuberculous Patient," Dr. R. E. Farr.

"Surgery of the Genito-Urinary Tract and Chest," Dr. S. R. Maxeiner.

"Surgery of the Abdomen and Lymphatic System," Dr. R. R. Cranmer.

All persons interested in tuberculosis are invited to attend these meetings and participate in the discussions.

OF GENERAL INTEREST

Dr. F. D. Smith, of Kasson, attended the Tri-State Medical meeting at Milwaukee, in November.

Dr. Roy F. Raiter, Cloquet, has returned from a month's visit to the various clinics in New York City.

Mr. David Shepard, St. Paul, has been chosen president of the Board of Trustees of St. Luke's hospital in that city.

Dr. A. K. Stratte, formerly associated with the Northern Pacific Beneficial Association Hospital, is now located at Pine City, Minnesota, where he is doing general practice work.

Miss Anne Toben, daughter of Mrs. Theodore Toben, Duluth, became the bride of Dr. Earl R. Lowe, of South St. Paul, November first. Dr. and Mrs. Lowe are now at home in South St. Paul.

Dr. Harold T. Nesbit has announced the opening of offices at 322-323 Lowry Building, St. Paul, for the practice of his profession. Dr. Nesbit limits his practice to the diseases of infants and children.

Dr. Arthur E. Mark, formerly of the Mayo Clinic, Rochester, and of the Miller and Earl Clinics, St. Paul, has recently moved from Long Beach, California, to Hollywood, where he is located in the Taft Building.

Dr. D. C. Lohead, field secretary and clinician for the Minnesota Public Health Association, has resigned to accept the position of deputy health officer of Rochester, of which city Dr. Charles H. Mayo is health officer.

Dr. J. A. Myers, Minneapolis, read a paper before the Hardin County Medical Society, Eldora, Iowa, the week of November 10. The previous week, Dr. Myers presented a paper before the Trudeau Medical Society, Ann Arbor, Michigan.

Scholarships on the Oliver-Rea Foundation for graduate study in medicine are available at the New York Post-Graduate Medical School and Hospital. Inquiries should be addressed to the Dean, 301 East Twentieth Street, New York City.

Dr. W. E. Belt, of Dodge Center, attended the Violin Makers' Convention at New York last month. The doctor has a completely equipped shop and has been making violins as a hobby for many years. Some of these have been unusually fine and commanded a high price.

Few are acquainted with the existence at Carville, Louisiana, of a National Leprosarium for the care of those afflicted with leprosy in this country. Its present capacity of 211 beds is continually overtaxed, but in the near future facilities will be increased to 415 beds. It is estimated that there are 500 to 1,000 lepers still at large in the United States, who, to a certain degree, are a menace to public health.

The American Chemical Society announces a Prize Essay Contest for the school year 1924-1925, open to high and secondary school students, consisting of six scholarships at Yale University or Vassar College with tuition fees and \$500.00 annually for four years. Six prizes of \$1,000.00 each are offered to college undergraduates in addition to the above. It is not required that students be enrolled in courses of chemistry as the purpose of the contest is to arouse interest in the general subject of chemistry. Information may be obtained from the Secretary of the Committee

on Prize Essays, Alexander Williams, Jr., 85 Beaver Street, New York City, N. Y.

The National Board of Medical Examiners was organized to establish a standard qualifying examination of such character that its certificate of qualification to practice medicine would be accepted by medical licensing boards in all states, and the holder of this certificate be granted a license to practice without further examination. To date its certificate is accepted by 29 states and territories and several foreign countries. The Board aims not only to safeguard and simplify the process of determining those who are qualified to practice medicine, but to aid the medical colleges and state authorities in promoting high standards of medical education and practice. Examinations are open only to students of Class A Medical Schools, which automatically makes it impossible for candidates with fake diplomas to secure its certificate and in this way helps the State Boards in keeping out unqualified practitioners. Examinations were held this year in Minnesota at Fort Snelling. Headquarters are located in Philadelphia.

SMALLPOX

An epidemic of malignant smallpox has recently developed in Minneapolis, fifty-five deaths having been reported from the first of the year to November 18th. The epidemic at this date seemed to be on the increase, 157 cases being under quarantine as compared with 124 a week previous. The total number of cases so far this year has totaled 523.

In St. Paul there have been 688 cases since the first of the year with five deaths reported. It is not generally appreciated that St. Paul has had actually more cases of smallpox this year than Minneapolis. The Minneapolis variety has been much more malignant, however.

The rush for vaccination by the population in both cities has some interesting features. No activity on the part of physicians has been necessary and little has been heard from the anti-vaccinationists. The following facetious editorial appeared in the Fairmont Daily Sentinel, November 15th:

"Someone started the smallpox scare in the Twin Cities. Result, hundreds of thousands are being vaccinated. Meantime word comes from the Rochester clinic that the chief benefit from vaccination is removal of the scare—and of course Rochester is the last word in medical wisdom. It is a great graft for physicians, the charges being all the way from \$2.00 up, according to the quality of your stockings and the size of your diamonds."

The editor forgot to mention that the Health Departments of the Twin Cities have been vaccinating thousands of citizens daily free of charge so that those who consider the usual fee exorbitant can obtain vaccination for nothing. Also no mention is made of the fact that all vaccinations so far have been submitted to voluntarily. The inference derived from the above quotation is that vaccination does not protect against smallpox. The average Twin City citizen apparently does not agree with the worthy editor of the Daily Sentinel, who is nothing loth to display his ignorance of smallpox infection. When smallpox hits Fairmont, as it some day doubtless will, we wonder whether the editor of the Daily Sentinel will be consistent and avoid the immunity afforded by vaccination.

NEW AND NON-OFFICIAL REMEDIES

The following articles have been accepted by the Council on Pharmacy and Chemistry:

BATTLE CREEK FOOD COMPANY:

Lacto-Dextrin

ELI LILLY AND COMPANY:

Pituitary Extract-Lilly (Obstetrical)
Pituitary Extract-Lilly (Obstetrical), 0.5 c.c.
Pituitary Extract-Lilly (Obstetrical), 1 c.c.
Pituitary Extract-Lilly (Surgical)
Pituitary Extract-Lilly (Surgical), 1 c.c.

MEDICAL LABORATORIES, INC.:

Culture Bacillus Acidophilus-Medical Laboratories, Inc.

MERCK AND COMPANY:

Barbital-Merck
Barbital Sodium-Merck
Carbon Tetrachloride-Merck Highest Purity "C.P."

H. K. MOLFORD COMPANY:

Cargentos Capsules, 3 grains
Cargentos Ointment, 5 per cent
Diphtheria Toxin-Antitoxin Mixture New Formula
(Park Banzhaf 0.1 L+ Dose)-Molford

NUTRIVOID DIABETIC FLOUR COMPANY:

Nutrivoid Flour

PARKE, DAVIS AND COMPANY:

Antidysenteric Serum-P. D. and Co., 20 c.c. syringe

POWERS-WEIGHTMAN-ROSENGARTEN COMPANY:

Quinine Ethyl Carbonate-P. W. R.

NEW AND NON-OFFICIAL REMEDIES

Meroxyl.—A mixture containing approximately 50 per cent of the sodium salt of 2,4-dihydroxy-3,5-dihydroxymercuribenzophenone-2-sulphonic acid, with foreign matter containing ammonium 2,4-dihydroxy-benzophenone-2-sulphonate, sodium acetate and water. Meroxyl is a local antiseptic and germicide proposed for use in superficial infections. It is used for wet dressings of wounds, and also for irrigation of wounds and infected bladders. Meroxyl is marketed in the form of tablets containing 0.15 Gm. Hynson, Westcott and Dunning, Baltimore. (Jour. A. M. A., Oct. 4, 1924, p. 1079.)

Metaphen.—Bisacetoxymercuri-4-nitro-2-cresol. It contains from 58 to 60 per cent of mercury in organic combination. Metaphen is a germicide, more powerful than mercuric chloride and certain organic mercury compounds when tested on cultures of *Staphylococcus aureus* and *Bacillus typhosus*. It is stated to be relatively non-irritating when applied to mucous membranes or the skin, and to be without deleterious action on metallic instruments or rubber. Metaphen is proposed for use in the treatment of gonorrhea, infections of the eye, for skin sterilization and for sterilization of instruments and rubber. It is insoluble in water, and, for use, solutions must be prepared with the aid of sodium hydroxide. It is supplied in the form of metaphen solution 1:5,000. Abbott Laboratories, Chicago. (Journal A. M. A., Oct. 11, 1924, p. 1167.)

Sterile Ampules Mercury Benzoate 2 per cent, 1 c.c.—

Mercuric benzoate-N. N. R. (New and Non-official Remedies, 1924, p. 200), 0.02 Gm. (1/3 grain), in a solution of sodium chloride 2.5 per cent, 1 c.c. Swan-Myers Co., Indianapolis.

Sterile Ampules Mercury Succinimide, 0.01 Gm. (1/6 grain).—Mercuric succinimide-N. N. R. (New and Non-official Remedies, 1924, p. 204), 0.01 Gm., in water 1 c.c. Swan-Myers Co., Indianapolis.

Sterile Ampules Mercury Salicylate, 0.065 Gm. (1 grain).—Mercuric salicylate-U. S. P., 0.065 Gm.; benzocaine-N. N. R., 0.02 Gm., in neutral vegetable oil, 1 c.c. Swan-Myers Co., Indianapolis.

Sterile Ampules Mercury Salicylate, 0.097 Gm. (1 1/2 grain).—Mercuric salicylate-U. S. P., 0.097 Gm.; benzocaine-N. N. R., 0.02 Gm., in neutral vegetable oil, 1 c.c. Swan-Myers Co., Indianapolis.

Sterile Ampules Mercury Biniodide, 0.01 Gm. (1/6 grain) in oil.—Red mercuric iodide-U. S. P., 0.01 Gm. suspended in pure cottonseed oil, 1 c.c. Swan-Myers Co., Indianapolis.

Concentrated Tetanus Antitoxin (Globulin).—Tetanus antitoxin, concentrated (New and Non-official Remedies, 1924, p. 297), marketed in packages of one syringe containing 10,000 units; in packages of one syringe containing 20,000 units; in packages of one cylinder containing 5,000 units for intraspinal use; in packages of one cylinder containing 10,000 units with intravenous outfit. Lederle Antitoxin Laboratories, New York.

Antipneumococcus Serum, Type 1.—Antipneumococcus serum (New and Non-official Remedies, 1924, p. 304), marketed in packages of one cylinder containing 100 c.c. with intravenous outfit; in packages of one vial containing 100 c.c. Lederle Antitoxin Laboratories, New York.

Antistreptococcic Serum, Polyvalent.—Antistreptococcic serum (New and Non-official Remedies, 1924, p. 305), marketed in packages of one syringe containing 20 c.c.; in packages of three 10 c.c. vials; in packages of one vial containing 50 c.c.; in packages of one vial containing 100 c.c.; in packages of one cylinder containing 100 c.c. with intravenous outfit. Lederle Antitoxin Laboratories, New York.

Acne Vaccine.—Acne vaccine (New and Non-official Remedies, 1924, p. 316), marketed in packages of four vials containing respectively 5, 10, 20 and 40 million killed acne bacilli; in packages of one 5 c.c. vial containing 40 million killed acne bacilli per c.c.; in packages of one 10 c.c. vial containing 40 million killed acne bacilli per c.c. Lederle Antitoxin Laboratories, New York. (Journal A. M. A., Oct. 18, 1924, p. 1245.)

Staphylococcus Vaccine Polyvalent-Lederle.—Staphylococcus Vaccine (New and Non-official Remedies, 1924, p. 324), marketed in packages of one 5 c.c. vial containing 800 million killed *Staphylococcus albus*, 800 million killed *Staphylococcus aureus* and 400 million killed *Staphylococcus citreus* per c.c.; in packages of one 10 c.c. vial, containing 800 million killed *Staphylococcus albus*, 800 million killed *Staphylococcus aureus* and 400 million killed *Staphylococcus citreus* per c.c. Lederle Antitoxin Laboratories, New York.

Pneumococcus Vaccine Polyvalent-Lederle.—Pneumococcus vaccine (New and Non-official Remedies, 1924, p. 322), marketed in packages of one 5 c.c. vial containing 3,000

million killed pneumococci per c.c. Lederle Antitoxin Laboratories, New York.

Typhoid Vaccine (for prophylactic treatment)-Lederle.—Typhoid vaccine (New and Non-official Remedies, 1924, p. 326), marketed in packages of 30 vials; in packages of one 5 c.c. vial containing 1,000 million killed typhoid bacilli per c.c.; in packages of one 20 c.c. vial containing 1,000 million killed typhoid bacilli per c.c. Lederle Antitoxin Laboratories, New York.

Typhoid combined vaccine prophylactic-Lederle.—Typhoid vaccine (New and Non-official Remedies, 1924, p. 326), marketed in packages of 30 vials; in packages of one 5 c.c. vial; in packages of one 20 c.c. vial. Lederle Antitoxin Laboratories, New York. (Journal A. M. A., Oct. 25, 1924, p. 1335.)

PROPAGANDA FOR REFORM

Some "Mixed" Vaccines of G. H. Sherman Not Accepted for N. N. R.—The Council on Pharmacy and Chemistry reports that the following "mixed" vaccines of the firm of G. H. Sherman were found to be unacceptable for New and Non-official Remedies: Erysipelas Vaccine No. 1, Pneumo. Mixed Vaccine No. 6, Strepto. Staph. Vaccine No. 10, Colon Bacillus Combined Vaccine (Modified Van Cott) No. 35, Friedlander Vaccine No. 36, Influenza Vaccine No. 38, Catarrhal Vaccine No. 40, Whooping Cough Mixed Vaccine No. 43. As evidence for these "mixed" vaccines the firm submitted a printed brochure: "Data on the Use of Mixed Bacterial Vaccines." Part of the data consisted chiefly of the reproduction of letters from physicians—some of them men of high standing—testifying to the value of "mixed" vaccines in various conditions. The other part of the data consisted of abstracts or reprints of articles which have appeared in medical publications. This evidence the Council found unacceptable. The evidence for the several vaccine mixtures under consideration did not establish the rationality of any of them. On the contrary, their use is bound to lead to haphazard therapy—particularly so, because the trend of the Sherman advertising which accompanies the products is toward the use of vaccine mixtures. This includes a complete line of Sherman vaccines and contains a long list of diseases with recommendations for the use of vaccines, generally referred to by numbers rather than by names descriptive of their composition. (Journal A. M. A., Oct. 11, 1924, p. 1184.)

Jack Sprat Bread, Another Obesity Cure Fake.—This bread is put on the market by Charles Sulzer and Co., Chicago, and proclaimed by Sulzer to be "My Magical Discovery." It is said to be "rich in protein" and "unusually low in starch." It is claimed ". . . easily and pleasantly Jack Sprat restores the beauties of form and features." Analysis shows that Jack Sprat Bread has between 29 and 33 per cent of starch and a total carbohydrate content of 36 to 40 per cent. It seems to be a very ordinary product which is a hybrid between a gluten and a whole wheat bread. The statement that the bread is unusually low in starch content is false. It is not true, as claimed, that the obese can reduce by eating all they want, whenever they want it. The claim that "Nothing can reduce you as Jack Sprat will" is sheer quackery. (Journal A. M. A., Oct. 18, 1924, p. 1261.)

PROCEEDINGS OF THE MINNESOTA ACADEMY OF MEDICINE

MEETING OF OCT. 15, 1924

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, October 15, 1924, at 8 p. m. having been postponed one week on account of the meeting of the State Society. The meeting was called to order by the President, Dr. H. P. Ritchie. There were 27 members present.

The minutes of the September meeting were read and approved.

A committee consisting of Drs. Arnold Schwyzer, H. B. Sweetser and John F. Fulton was appointed by the President to draw up suitable resolutions on the death of Dr. Archibald MacLaren, a former president of the Academy.

There were no papers read at this meeting, but the following members reported cases:

DR. HARRY ZIMMERMAN (St. Paul) reported a case of supposed hernia, which at operation proved to be angiosarcoma.

DISCUSSION

DR. A. SCHWYZER: In connection with this interesting case I want to report a case of angiosarcoma in the region of the upper part of the sternum and mediastinum. The man was exceedingly cyanosed and the veins of the neck were distended. He was blue and had had to remain in sitting posture day and night for several weeks. The bulging area was about 10 cm. in diameter and was spongy. At the periphery there were large veins running in all directions. I thought if I could get some radium into the center of that mass I could do most good and save the skin over it. We made a quick incision, packed gauze with 50 milligrams of radium in tightly as quick as the incision was made, but the loss of blood was severe for a short time. We left the radium in the first time only seven hours. A few days later the radium was put in again, this time for 24 hours. When we removed that radium the bleeding was very much less than we had expected though we had entered the sternum with a rongeur forceps at the second session. We waited again about a week and then we went in again, this time through the sternum into the anterior mediastinum. Radium was put in now for 48 hours. The same dose was given two weeks later. It was amazing how that tendency to bleeding had disappeared. He had had in all 8,600 milligram hours. He did very well and went home happy. In fact the condition looked much improved. About three months later he died of what was declared pneumonia.

The effect of radium in angiosarcoma is wonderful, especially if you can get the radium into the center.

DR. R. E. FARR (Minneapolis) reported the following case:

Mr. N. J. L., aged 59, entered St. Mary's Hospital on June 1, 1924, giving the following history:

Left sided hernia for 26 years. About one year ago hernia seemed to disappear for about nine months. Two or three weeks ago patient slipped on a banana peel and immediately noticed bulging in left scrotum. Severe pain for six or seven days. Since that time has had frequent urination day and night with burning. The urine contains a large amount of pus. Patient feels that he empties the

bladder better if he lifts the hernia sac upward, pressing its contents into the abdomen.

June 2, 1924, sacral anesthesia, 70 c.c. of 1 per cent was administered. The bladder was found to contain 75 c.c. of cloudy urine which contained much pus. The bladder was distended with air and with the patient standing a cystogram was made. Cystoscopic examination showed a marked cystitis with a large diverticulum to the left.

On July 17th the patient was operated upon under local anesthesia. The hernia contained nothing excepting the bladder, which was dissected free and returned to the abdomen. The abdominal wall was reconstructed. The radiogram showed the normal contour of the bladder with a compartment about equal to that in the left scrotum. This radiogram was confirmed by one made with sodium bromide solution. A third radiogram shows a sodium bromide cystogram of the bladder after operation. Diverticulum seems to have disappeared—the outline of the bladder being perfectly normal.

DISCUSSION

DR. A. SCHWYZER: Did this come out like a hernia?

DR. FARR: I think this patient had a direct hernia and a diverticulum of the bladder. One point which I did not mention in reporting the case relates to his cystitis. We were unable to overcome his bladder infection by irrigations before operation and yet directly after operation when the bladder emptied completely the infection disappeared.

DR. H. B. SWEETSER (Minneapolis) reported the following case: I would like to report a case which shows that if you have your mind fixed on one thing you may forget the real thing. We had a man who had an abscess of the prostate three or four weeks ago, with a high leucocyte count. We opened the abscess through the perineum. He improved and got along very well for about ten days and then he had a very severe hemorrhage. He went along and was very well again until last Thursday or Friday when he had another quite severe hemorrhage. I saw him then and packed the cavity, and there was just one little spot where the packing was efficient. Early Sunday morning he had another quite severe hemorrhage and when Dr. T. H. Sweetser got down to the hospital the man had already lost a lot of blood.

I had supposed it was like the cases of secondary hemorrhage we had in the old days when I was an intern, due to suppuration.

On Monday morning his mother was at the hospital and she said, "I am a bleeder and my daughter is a bleeder." Also she told us the patient had had his tonsils out about a year ago, and, after he had gone home, he had a hemorrhage which required packing to control.

On Monday we tried to ascertain the bleeding time and let it bleed for 50 minutes and then had to stop it. We gave him 20 c.c. of whole blood under the skin, and yesterday his clotting time was 3 minutes.

I had entirely lost sight of the fact that this might be a case of hemophilia.

DR. H. L. ULRICH (Minneapolis) reported a case of subacute bacterial endocarditis, and showed x-ray films and specimen.

Because of some of the unusual features this case is reported. A Swede, 35 years old, a laborer, some ten months in this country, entered the General Hospital July 18, 1924, complaining of recurrent colds of seven months' standing, fatigability seven months, anorexia two months, occasional chill, and edema of the ankles for one month. There has been no loss of weight.

The past history is practically negative. He had noticed some rheumatic pains in the left hip and shoulder for the past three years, had diphtheria at seven. Denies venereal disease. Family history and social history of no significance.

On entrance his physical examination revealed the following positive findings: some pallor of the skin and mucous membranes, marked pyorrhea, throat injected, tonsils enlarged. Some variation in breath sounds in the right lower chest. Heart is not enlarged, apex beat is forcible and a thrill is felt over this area. Mitral tone is loud and distant, the first being split and roughened. Liver is not enlarged, but the spleen is easily palpable and firm but not tender. Blood pressure 104-50. Temperature 101-99. Blood picture: R. B. C. 3,140,000; hemoglobin 63%, W. B. C. 5,000. P. M. N. 57%, Lymph. 29%, Large mononuclear 9%, eosinophil 1%. Urine amber, acid, specific gravity 1,008, albumen present, no sugar. Hyaline, granular casts, many R. B. C., and a few leucocytes present.

Four days after admission he developed severe abdominal pain and diarrhea. On the fifth day a pustular rash developed on the face and neck, wrists and hands.

Up to this time the tentative diagnosis had been: endocarditis, pulmonary tuberculosis, typhoid fever, tuberculous enteritis, possible T. B. kidney. Owing to the pustular eruption the patient was quarantined as a smallpox subject. The dermatologists, however, made a diagnosis of erythema multiforme. During this period his temperature had been above normal, varying between 102-99. On August 12, some three weeks after his admission, the patient was returned to my service. His temperature had been normal since July 29th. His heart presented a moderate enlargement to the right and left, with a diffuse wavy impulse and a thrill in the fifth interspace inside of the apical area. At the left of the sternum there was a loud harsh diastolic murmur. The spleen was easily felt. Skin of the face was clearing. There was some pigmentation of the face, also of the wrists and hands.

X-ray report of the heart, six-foot plate at about this time: total diameter 15 cm., cardiac enlargement, aortic or hypertension type, probably aortitis. During this period the blood showed the characteristic picture of secondary anemia, hemoglobin from 49% to 38%, reds, 2,800,000 to 2,500,000, leucocytes from 5,000 to 2,700. On August 25th blood chemistry showed: creatinine 2.6 mgms., urea nitrogen 59.9 mgms. Uric acid 6.8 mgms. Van Slyke 40%, Van der Bergh negative. Urine was of low specific gravity, casts, albumen, and R. B. C. present. Blood cultures were repeatedly negative.

The heart was of interest. The major lesion which centered around the aortic valve, the configuration of the heart, and auscultation definitely determined this. Yet there was a marked palpatory thrill inside of the apex, presystolic in time, a presystolic crescendo rumble ending in a snappy

first sound followed by a systolic murmur made some of the clinicians early in the study center the major lesion in the mitral valve. While the aortic lesion was convincing, the stenotic noise and palpatory thrill either spoke for a stenosis of the mitral or a Flint murmur. If a Flint murmur, it was the loudest and most pronounced thrill produced by a Flint ever felt in our wards. Its localization inside of the apex made the suggestion of a Flint more probable than that of a true mitral stenosis. The general condition of the patient meanwhile was fairly good. His appearance improved. He occasionally had a temperature slightly above normal.

The diagnosis of bacterial endocarditis with embolic nephritis was suggested. The absence of bacteria in the blood and at no time petechiae, are striking factors. On September 11th he developed a severe chill with a temperature of 106. Early September 12th he died.

Necropsy was performed by Dr. Kano Ikeda, of which the following description of findings are excerpted.

A few petechial hemorrhages in the conjunctiva. The peritoneal cavity contains 500 c.c. clear amber fluid. Pleural cavities clear, no adhesions. The pericardial sac contains 100 c.c. clear fluid. The heart weighs 500 grams, transverse width 17 cm., there are a few petechial hemorrhages over the epicardium of the right auricle, the ventricles are dilated. At the aortic orifices the left and right semilunar valves are apparently fused. They are thickened and show irregular yellowish soft vegetations 1x1x2 cm. at the free edges extending downward into the ventricular cavity. There are numerous small vegetative nodules. There is an irregular ulceration of the mural endocardium below the left semilunar valve. The coronaries are patent. The rest of the aorta contains a few yellowish plaques. The lungs are clear. The spleen weighs 730 gms. The capsule is adherent to the surrounding structure. It is tough and shows areas of fibrositis. On section the pulp is dark red and scrapes easily. In the superior pole of the spleen there is an infarct 2 cm. in diameter. The corpuscles are prominent and trabeculae are distinct. The gastrointestinal tract is negative. The pancreas and adrenals are negative. Left kidney weighs 240 gms., the right 230 gms. The capsules strip readily, leaving smooth surfaces with gray and red mottlings. There are minute pin-point dark spots on the surface. On section the surface is mottled, cloudy and swollen. The bladder and genitalia are normal. Head was not examined. Blood culture from the heart negative after three weeks.

Diagnoses: Subacute bacterial endocarditis. Aortic valvulitis. Infarct of spleen—perisplenitis. Cloudy swelling of liver and kidneys. Embolic glomerulonephritis. Ascites. Splenomegaly.

Microscopic sections of the heart through the aortic valve show gram positive cocci, probably streptococci (?). Heart muscle shows diffuse invasion of P. M. N., particularly surrounding the blood vessels, probably embolic myocarditis. Kidneys show diffuse embolic glomerulonephritis. Liver shows early passive congestion. Spleen shows infarcts and passive congestion.

This case differs in certain details from the usual type of subacute bacterial endocarditis. The marked erythematous lesion of the skin, the absence of bacteria in the blood, the

absence of petechiae until the terminal event are striking. It differs from Libman's aberrant type with skin lesions in that the lesion in the heart is not verrucous, in the absence of pericardial or pleuropericardial lesions and in the absence of petechiae.*

DISCUSSION

DR. S. E. SWEITZER: This very interesting case reported by Dr. Ulrich came in on the medical side and I first saw him in consultation in the contagious ward, where a diagnosis of phlegmon of the face had been made. He was sent in for smallpox. In one or two days the condition arrived at a stage which showed tremendous edema of the face, including the eyelids, a bullous eruption of the neck, an eruption on the backs of the hands, both large and small lesions. There were hemorrhagic crusts over the nose and around the mouth. Ordinarily we would figure that this man had either a drug rash, smallpox, or erythema multiforme. I had a number of my colleagues see him and each one made a different diagnosis so I stood alone in my diagnosis of erythema multiforme. I thought he had some extreme type due to some virulent organisms. We have long looked upon erythema multiforme as due to various causes. In this particular instance it was septic endocarditis.

While in the contagious ward we placed him on large doses of salicylates and he began to improve immediately. After his skin cleared up sufficiently to send him back to the general ward he did not do so well, and died in about three weeks.

DR. A. SCHWYZER (St. Paul) reported the following case: Dr. Sweetzer's case reminds me of a wrong diagnosis I made three weeks ago on a patient. I had thought he had definitely a carcinoma of the stomach. When he was brought into the hospital his hemoglobin was 40. He had bled very copiously from the stomach and intestines and had not been feeling well for two or three months. When you put your hand lightly on the epigastrium you could feel a boggy hard mass about 2 inches wide all the way across the epigastrium, just exactly like carcinoma. It moved with respiration. We wanted to see what we could do for him and made an incision. He had bled so much that we had not dared to take a roentgenogram and thought an exploratory operation would be the best to help us out.

Under local anesthesia we opened the abdomen. The small intestines were pale and flabby, but there was one very dark red, almost black, small intestinal loop. Its peritoneal covering was not glossy any more but somewhat roughened. There were in the corresponding mesentery little streaks of blood and the whole loop felt fleshy and thick. We had here undoubtedly a thrombosis but not a large complete infarct. About 2 cm. away from the gut the mesentery was normal. The attachment of the mesentery was dark red and thick. In pulling down the omentum we found the whole transverse colon big, thick and solid, dark red, but not completely black. No marked edema with it. The surface was not shiny as it is normally. The whole colon was firm and this was the mass we had felt. At the periphery of this area there were streaks of suffusion. About 3 cm. down on the transverse mesocolon the discoloration

ceased. On the stomach itself there was nothing to be seen except on the greater curvature a few small subperitoneal hemorrhages. Apparently we had only small but multiple radicular thromboses in these areas of the portal system.

We closed the abdomen up and gave him Bulgarian sour milk. He had to have something, as he had been starved for 3 or 4 days before entering the hospital. The recovery was surprisingly smooth. The patient is all right now. I thought this was interesting, for the infarction was not only in the transverse colon but also in the loop of jejunum. There had been no fever. It was a degree of infarction which, notwithstanding the marked palpatory findings and discolorations, did not completely obstruct the circulation. Small nicks with the knife had shown bleeding.

I might add that the black vomit after operations, especially on the omentum, is also considered to be due to this form of radicular thrombosis in the portal system.

The meeting adjourned.

JOHN E. HYNES, M.D.,
Secretary.

BOOK REVIEWS

BOOKS RECEIVED FOR REVIEW

INTERNATIONAL CLINICS. Vol. III. Thirty-fourth series, 1924. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, in collaboration with others. 304 pages. Illus. Philadelphia: J. B. Lippincott Co., 1924.

OPERATIVE SURGERY. Alfred T. Bazin, D.S.O., M.D., Asst. Prof. of Surgery and Clinical Surgery, McGill University, Montreal, Canada. 126 pages. Cloth, \$2.50. Montreal: Renouf Publishing Co., 1924.

THE ROCKEFELLER FOUNDATION. ANNUAL REPORT, 1923. 389 pages. Illus. New York: The Rockefeller Foundation Press, 61 Broadway, New York, 1924.

FUNDAMENTALS OF HUMAN PHYSIOLOGY. R. G. Pearce, B.A., M.D., formerly director Medical Research Laboratory, Lakeside Hospital, Cleveland, O., formerly Asst. Prof. of Physiology, Univ. of Illinois, Chicago; and J. J. R. MacLeod, M.B., D.Sc., F.R.S., Prof. of Physiology, Univ. of Toronto, Canada, formerly Prof. of Physiology, Western Reserve Univ., Cleveland, O. 3rd edition. 349 pages. Illus. Cloth, \$3.50. St. Louis: C. V. Mosby Co., 1924.

MATERIA MEDICA FOR NURSES. A. L. Muirhead, M.D., late Prof. of Pharmacy, Creighton Univ., Omaha, and Edith P. Brodie, A.B., R.N., Institute of Materia Medica and Therapeutics, Washington Univ. School for Nurses. 2nd edition. 190 pages. Illus. St. Louis: C. V. Mosby Co., 1924.

THE FOUNDATION OF HEALTH. A Manual of Personal Hygiene for Students. William Barnard Sharp, S.M., M.D., Ph.D., Prof. of Bacteriology and Preventive Medicine in the Medical Department of the University of Texas, Galveston. 256 pages. Illus. Cloth, \$2.50. New York and Philadelphia: Lea & Febiger, 1924.

BASAL METABOLISM IN HEALTH AND DISEASE. Eugene F. DuBois, M.D., Medical Director, Russell Sage Institute of

*A Hitherto Undescribed Form of Valvular and Mural Endocarditis. Emanuel Libman and Benjamin Sachs. Arch. of Int. Med., June 15, 1924, p. 701.

- Pathology; Associate Prof. of Medicine, Cornell University Medical College. 372 pages. Illus., with 79 engravings. Cloth, \$4.75. New York and Philadelphia: Lea & Febiger, 1924.
- PATHOGENIC MICROORGANISMS.** A Practical Manual for Students, Physicians and Health Officers. Wm. Hallock Park, M.D., Anna Wessels Williams, M.D., and Charles Krumweide, M.D. 8th edition, enlarged and revised. 811 pages. 211 engravings and 9 full page plates. Cloth, \$6.50. New York and Philadelphia: Lea & Febiger, 1924.
- PRINCIPLES OF BIOCHEMISTRY.** For Students of Medicine, Agriculture and Related Sciences. T. Brailsford Robertson, Ph.D., D.Sc. 2nd edition, thoroughly revised. Illus., with 57 engravings. Cloth, \$8.50. New York and Philadelphia: Lea & Febiger, 1924.
- ANATOMY OF THE HUMAN BODY.** Henry Gray, F.R.S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London. 21st edition, thoroughly revised and re-edited by Warren H. Lewis, B.S., M.D. 1,417 pages. Illus., with 1,283 engravings. Cloth, \$10.00. Philadelphia and New York: Lea & Febiger, 1924.
- THE PHYSIOLOGY OF EXERCISE.** A Text Book for Students of Physical Education. James Huff McCurdy, A.M., M.D., M.P.E., Director of Physical Education course in the International Young Men's Christian Association College, Springfield, Mass.; Editor of American Physical Education Review. 242 pages. Illus. Cloth, \$3.00. New York and Philadelphia: Lea & Febiger, 1924.

ULTRA-MODERN HOME in Lynnhurst district, Minneapolis, formerly occupied by physician and ideal for member of medical profession, will be sacrificed if sold this month by out-of-town owner. On corner lot, with beautiful lawn, trees and shrubbery, home is eight-room tapestry brick and kragstone bungalow. First floor has large living room, brick fireplace, built-in features; large dining room with built-in buffet; two large bedrooms, French windows; breakfast room with French windows on three sides; white enamel kitchen and gas and coal combination range; large porch with pagoda roof. Basement has amusement room, daylight laundry, separate work, vegetable, boiler and coal rooms, and fireproof garage. Hot water heating system. Upstairs has large guest room, maid's room, washroom with running water. For information or appointment, call Mr. Kaufman, Main 1793, or write H. H. Kaufman, 1606 Oliver Ave. N., Minneapolis.

THE MINNEAPOLIS GENERAL HOSPITAL offers a Technician's Course in x-ray to women having high school diplomas. Course covers a period of eight months. Diploma is issued upon completion of the course. Noon meal furnished. Address Minneapolis General Hospital, Minneapolis, Minn.

McDANNOLD SURGICAL CHAIR—Send for circular and big discount. A. McDannold Chair Co., 1416-18 N. Sarah St., St. Louis, Mo.

ORGANOTHERAPY IN GENERAL PRACTICE. 253 pages. Illustrated. New York: G. W. Carnrick Co., 1924. \$2.00.

This volume has been put out by the G. W. Carnrick Company, of New York City, and is offered to the profession. The author's name is conspicuous by its absence. An anonymous volume of any kind lacks authority and when it is produced by a commercial house it is naturally received with hesitation, to say the least.

The following appears under the heading "Insulin in Treatment": "For the routine treatment of diabetes of the mild or moderately developed type, extending over years, the daily or twice daily injection of an expensive product has failed to meet the requirements. Oral administration appears to be the only satisfactory method for this long continued treatment in the home. Numerous extracts have been prepared for oral administration and have proved successful in reducing blood sugar and correcting disturbed carbohydrate metabolism. Berkeley, Wallis, Achard and others have prepared extracts which gave good results clinically and Banting and Best and Murlin have given experimental evidence of the value of such extracts by administration through the stomach. No pancreas preparation, however, has received as extensive clinical trial as Trypsogen."

The occurrence of such an obviously unfounded statement in a work of this sort further discredits the entire volume. Physicians and not commercial houses should be the authorities on therapeutics.

C. B. DRAKE, M.D.

A PRACTICAL COURSE IN STANDARDIZED PHYSIO-THERAPY, under auspices of Biophysical Research Department of Victor X-Ray Corporation, is now available to physicians. Offers a highly practical knowledge of all the fundamental principles that go to make up the standards of modern scientific physiotherapeutic work. Course requires one week's time. For further information apply to J. F. Wainwright, Registrar, 236 South Robey Street, Chicago, Ill.

EXCELLENT LOCATION for physician in new building at 3805 Nicollet avenue, Minneapolis. Fine new heated apartment, four rooms and bath, can be had in conjunction. Reception room with dentist. For information call Colfax 2754.

WANTED—To buy an unopposed practice in Minnesota by a physician and surgeon. Address C-9, care MINNESOTA MEDICINE.

MEDICAL DOCTOR WANTED at once in city of 4,000 population. Community hospital, good territory. For particulars write Mlinar Drug Store, Hutchinson, Minn.

MINNEAPOLIS OFFICE SPACE TO SUBLET—Very desirable office space at 323 La Salle Bldg., Minneapolis, to be sublet by Drs. Willson, Cabot and Wohlrahe. For information call at office or telephone Main 3220.

Minnesota State Medical Association

ANNUAL MEETING

October 8, 9 and 10, 1924

ST. CLOUD, MINNESOTA

MINNESOTA STATE MEDICAL ASSOCIATION
MINUTES OF THE FIFTY-SIXTH ANNUAL
MEETING HELD IN ST. CLOUD, OCTOBER
8, 9 AND 10, 1924

PROCEEDINGS OF HOUSE OF DELEGATES

FIRST SESSION—WEDNESDAY, OCTOBER 8, 1924

The House of Delegates held its first meeting Wednesday afternoon in the Knights of Columbus Hall, with the First Vice President, Dr. E. T. Sanderson, Minnesota, in the chair.

THE CHAIRMAN: You will please come to order while Dr. Drake reads a communication from Dr. MacLaren, our President.

THE SECRETARY: The following is a communication which Dr. MacLaren asked to be read before the meeting of the State Association:

It is with feelings of the deepest regret that I find it will be impossible for me to attend the meeting of the Minnesota State Medical Association at St. Cloud. Never having suffered from a severe illness before, it has seemed, from week to week, that I would surely be able to be with you at this time. In this hope, however, I am doomed to disappointment in spite of the excellent care given me by my skillful medical advisors. They assure me that before long I shall be out again and then it will be with the most heartfelt pleasure that I shall greet my old friends again. I wish to express, at this time, my keenest interest in the meeting and to send to you my best wishes for its great success.

DR. ARCHIBALD MACLAREN.

THE CHAIRMAN: I will appoint a committee to pass on the credentials of delegates: Dr. Condit, Dr. Braasch, and Dr. Gray; and we will stand at ease until the Credentials Committee reports.

(Upon motion, duly seconded and carried, the Minutes of the last meeting of the House of Delegates as published in MINNESOTA MEDICINE in the December, 1923, issue were accepted.)

THE CHAIRMAN: I will call upon Dr. Workman to present the recommendations of the Council and the Treasurer's Report incorporated in the Report of the Auditors of the accounts of the Association.

REPORT OF THE COUNCIL

The Council of the Minnesota State Medical Association convened at 11 o'clock, October 8, 1924, in the Knights of Columbus Club Rooms, St. Cloud, Dr. W. H. Workman, president of the Council, presiding. All members with the exception of Dr. Weiser, who was absent on account of illness, were present. Dr. E. T. Sanderson, first vice president, attended in the capacity of president in place of Dr.

Archibald MacLaren, and Dr. Carl B. Drake, secretary, was also present.

Dr. E. T. Sanderson was authorized to preside at the various meetings of the Association during the time of the convention to take the place of Dr. MacLaren, who was unable to attend because of illness. A communication from Dr. MacLaren was then read.

It was voted to approve the expenditure of \$175.00 in payment of expenses incurred in presenting a health exhibit at the 1924 State Fair, held in St. Paul in September.

The report of the Executive Secretary, which included the report of the auditor, Mr. Flesher, was then given by Mr. Bruce. This was followed by the report of the treasurer, Dr. F. L. Beckley. Both reports were approved by the Council, to be published with the regular transactions of the meeting.

The question of whether or not the Society should continue to give medical defense to members of the Association was discussed, but no definite action was taken on the matter.

Dr. Braasch then introduced the question of providing for a full time executive secretary, who would receive a definite salary for handling the affairs of the Association, to devote all his time to the interests of the Association. Upon motion to that effect, the president of the Council was asked to appoint a committee, to include himself, of three members, to bring this matter before the House of Delegates. Dr. Workman then appointed Dr. Braasch and Dr. Drake to act in conjunction with himself in this capacity.

Dr. Drake read the Secretary's report in which he included his resignation as secretary to become effective at the close of the present calendar year. The report was approved and Dr. Drake's resignation was accepted with an appreciation of his services for the past four years, which was voiced in the form of a motion made to the Council by Dr. Braasch.

Dr. Burnap then presented the matter of physicians' accepting contract fees from organizations for medical service rendered individuals belonging to such organizations, dealing particularly with the question raised by the Red River Valley Medical Society with respect to the Order of Eagles. It was recommended that the individual local medical societies adjust matters of this kind as they deemed best in each case brought to their attention. The motion was seconded and carried.

The matter of providing for physicians who have become incapacitated or are in straightened circumstances was brought before the Council by Dr. Drake. It was the consensus of opinion that this matter should be taken up with the House of Delegates.

The question of providing a circulating medical library for the use of the profession in the state was discussed but no action was taken inasmuch as the president stated that plans were now being made at the State University which would undoubtedly take care of an arrangement of this nature.

The Council then adjourned to meet immediately after the House of Delegates, Thursday morning.

H. M. WORKMAN.

REPORT OF THE AUDITORS
MINNESOTA STATE MEDICAL ASSOCIATION
SAINT PAUL, MINNESOTA

AUDIT REPORT
OCTOBER 10, 1923, TO OCTOBER 4, 1924

October 6, 1924.

Minnesota State Medical Association,
 J. R. Bruce, Secretary,
 Saint Paul, Minnesota.
 Gentlemen:

In accordance with your request, we have made a Balance Sheet audit of the books and records of the Minnesota State Medical Association for the period October 10, 1923, to October 4, 1924, and we present our report in the following Exhibits and accompanying comments:

EXHIBIT A—STATEMENT OF ASSETS, LIABILITIES AND NET WORTH AS OF OCTOBER 4, 1924.

EXHIBIT B—STATEMENT OF INCOME AND PROFIT AND LOSS FOR THE PERIOD OCTOBER 10, 1923, TO OCTOBER 4, 1924.

EXHIBIT C—TREASURER'S REPORT OF THE CASH RECEIPTS AND DISBURSEMENTS FOR THE PERIOD OCTOBER 10, 1923, TO OCTOBER 4, 1924.

EXHIBIT D—STATEMENT OF OPERATIONS OF MINNESOTA MEDICINE PUBLICATION, OCTOBER 10, 1923, TO OCTOBER 4, 1924.

The above statements were prepared from your books, and the items on the Balance Sheet were verified by actual inspection in the case of the bonds, a check of the bank statements, and a verification of the accounts receivable.

A list of the accounts receivable was furnished us and the executive secretary advised all the accounts were considered good and collectible.

On account of the short time allotted for this audit, it was deemed best not to insist on a physical inspection of the Northern Pacific Bonds shown on the Balance Sheet at \$4,000.00, as they were in a safety deposit box in a bank considerably removed from the office of the Treasurer, although he stated, if we so desired, he would secure them for our examination.

The accrued salaries payable consist of salaries due two of the officers of the association, which were not paid due to an oversight. All other liabilities have been paid.

EXHIBIT A—BALANCE SHEET: This statement sets forth the financial condition of the Association as of October 4, 1924. The Net Worth of the Association has increased from \$14,320.27 October 10, 1923, to \$14,845.00 October 4, 1924.

EXHIBIT B—STATEMENT OF INCOME AND PROFIT AND LOSS: This statement shows the result of operations of the Association for the period under review, whether or not the receipts or expenses have actually been paid out in cash. This was not possible last year, as the books were not on a double entry and accrual basis. It is now possible to show actual results.

EXHIBIT C—TREASURER'S REPORT: This statement shows the actual cash receipts and disbursements made by the Treasurer during the year, and the balance of cash on hand October 4, 1924.

EXHIBIT D—STATEMENT OF OPERATIONS OF THE MINNESOTA MEDICINE PUBLICATION: This statement is compiled for the purpose of showing the financial result of operations of the Magazine, "MINNESOTA MEDICINE." Inasmuch as members do not pay directly for a subscription to the magazine, an amount of \$2.00 per member is allotted to the magazine to show the revenue it is entitled to from subscriptions.

WE HEREBY CERTIFY, That subject to the above comments, in our opinion the Balance Sheet, Exhibit A, presents the true financial condition of the Association at October 4, 1924, and the Income and Profit and Loss State-

ment shows the true result of operations for the period under review.

Respectfully submitted,
FLESHER, FLESHER & COMPANY,
 (Seal) By BENJ. H. FLESHER.

EXHIBIT A
MINNESOTA STATE MEDICAL ASSOCIATION
BALANCE SHEET AS OF OCTOBER 4, 1924

| ASSETS | |
|---------------------------------------|-------------|
| Cash in Banks: | |
| Minnesota Transfer State..... | \$ 1,082.50 |
| Merchants National | 3.57 |
| | \$ 1,086.07 |
| Accounts Receivable | 1,940.24 |
| First Mortgage Real Estate Bonds..... | 7,700.00 |
| Northern Pacific Railway Bonds..... | 4,000.00 |
| Furniture and Fixtures..... | \$ 354.10 |
| Less: Allowance for Depreciation..... | 35.41 |
| | 318.69 |
| Total Assets | \$15,045.00 |
| LIABILITIES | |
| Accrued Salaries Payable..... | \$ 200.00 |
| NET WORTH | |
| Investment to October 10, 1923..... | \$14,320.27 |
| Net Income per Exhibit B..... | 524.73 |
| Total Net Worth | 14,845.00 |
| Total Liabilities and Net Worth..... | \$15,045.00 |

EXHIBIT B
MINNESOTA STATE MEDICAL ASSOCIATION STATEMENT OF INCOME AND PROFIT AND LOSS, OCTOBER 10, 1923, TO OCTOBER 4, 1924

| INCOME: | |
|--------------------------------|-------------|
| Membership Dues | \$ 9,900.00 |
| Advertising | 7,628.10 |
| Subscriptions | 342.10 |
| Interest on Investments..... | 619.00 |
| Interest on Bank Balances..... | 78.53 |
| Total Gross Income..... | \$18,567.73 |
| EXPENSE: | |
| Publication of Magazine..... | \$11,271.66 |
| Legal Expense | 3,739.25 |
| Salaries | 1,400.00 |
| Convention Expense | 1,049.82 |
| Display, State Fair..... | 175.37 |
| Council Stationery | 30.00 |
| Legislative Expense | 9.21 |
| Depreciation | 35.41 |
| Sundries | 285.52 |
| Discount | 41.26 |
| Interest Paid | 5.50 |
| Total Expense | 18,043.00 |
| Net Income for the Period..... | \$ 524.73 |

EXHIBIT C
MINNESOTA STATE MEDICAL ASSOCIATION TREASURER'S REPORT, OCTOBER 10, 1923, TO OCTOBER 4, 1924

| Cash on Hand October 10, 1923..... | \$ 3,472.75 |
|-------------------------------------|-------------|
| CASH RECEIPTS: | |
| Advertising | \$7,517.07 |
| Subscriptions | 334.25 |
| Dues | 9,910.00 |
| Interest on Investments..... | 619.00 |
| Interest on Bank Balances.. | 78.53 |
| Total Cash Received..... | 18,458.85 |
| Total Cash to be Accounted for..... | \$21,931.60 |

CASH DISBURSEMENTS:

| | |
|---------------------------------|-------------|
| Publication Expense | \$11,272.76 |
| Legal Expense | 3,739.25 |
| Salaries | 1,200.00 |
| Convention Expense | 1,049.82 |
| Council Expense | 205.37 |
| Legislative Expense | 9.21 |
| Sundries | 285.52 |
| Refund on Membership Dues | 10.00 |
| First Mortgage Bond..... | 3,000.00 |
| Accrued Interest on Bond.. | 5.50 |
| Filing Case | 68.10 |

Total Cash Disbursements.....\$20,845.53
Cash on Hand October 4, 1924.... 1,086.07

Total Cash Accounted for.....\$21,931.60

EXHIBIT D

MINNESOTA STATE MEDICAL ASSOCIATION STATE-
MENT OF OPERATIONS OF MINNESOTA MEDI-
CINE PUBLICATION, OCTOBER 10, 1923,
TO OCTOBER 4, 1924

REVENUE:

| | |
|--|-------------|
| Advertising | \$ 7,628.10 |
| Subscriptions, Non-Members | 342.10 |
| Membership Subscription Allow- ance, 1,952 Members at \$2.00 each | 3,904.00 |

Total \$11,874.20

EXPENSE:

| | |
|--|-------------|
| Printing | \$ 4,970.31 |
| Paper Stock | 1,851.23 |
| Editorial | 1,695.14 |
| Advertising Commission (Bruce Pub. Company) | 1,524.84 |
| Postage | 160.00 |
| Envelopes | 143.15 |
| Stenographic Service | 660.00 |
| Subscription Solicitation | 99.85 |
| Sundries | 167.14 |

11,271.66

Net Gain for the Period October 10, 1923,
to October 4, 1924 \$ 602.54

THE CHAIRMAN: If the Credentials Committee is ready
to report we will listen to that now.

DR. CONDIT: There are 43 members present, which con-
stitutes a quorum.

The following is a list of the delegates present:

| | |
|----------------------------|-----------------------------------|
| Aitkin County | Dr. B. W. Kelly, Aitkin |
| Blue Earth County..... | Dr. Ralph T. Edwards, Elysian |
| Central Minn. District.... | Dr. H. C. Cooney, Princeton |
| Clay-Becker County | Dr. W. H. Aborn, Hawley |
| Hennepin County | Dr. Geo. D. Head, Minneapolis |
| | Dr. W. A. Jones, Minneapolis |
| | Dr. Don. McCarthy, Minneapolis |
| | Dr. J. W. Bell, Minneapolis |
| | Dr. R. T. LaVake, Minneapolis |
| | Dr. J. G. Cross, Minneapolis |
| | Dr. J. C. Litzenberg, Minneapolis |
| | Dr. Chas. B. Wright, Minneapolis |
| Kandiyohi-Swift County... | Dr. C. L. Scofield, Benson |
| Meeker County | Dr. A. W. Robertson, Litchfield |
| Olmsted County | Dr. H. C. Bumpus, Rochester |
| | Dr. D. F. Hallenbeck, Rochester |
| | Dr. H. Z. Giffin, Rochester |
| | Dr. L. W. Pollock, Rochester |
| | Dr. V. C. Hunt, Rochester |

Park RegionDr. A. C. Baker, Fergus Falls
Ramsey CountyDr. F. C. Schuldt, St. Paul

Dr. George Earl, St. Paul
Dr. J. L. Martineau, St. Paul
Dr. H. Buscher, St. Paul
Dr. H. P. Ritchie, St. Paul
Dr. George Geist, St. Paul
Dr. A. Schulze, St. Paul

Red River Valley.....Dr. G. S. Wattam, Warren
Dr. H. M. Blegen, Warren

Redwood-Brown County..Dr. F. D. Gray, Marshall

Rice CountyDr. F. S. Warren, Faribault

St. Louis County.....Dr. W. A. Coventry, Duluth

Dr. L. A. Barney, Duluth
Dr. O. W. Parker, Ely
Dr. B. S. Adams, Hibbing

Scott-Carver CountyDr. H. W. Reiter, Shakopee

Southwestern Minnesota ..Dr. L. Sogge, Windom

Stearns-Benton County...Dr. A. F. Moynihan, Sauk Center

Steele CountyDr. A. B. Stewart, Owatonna

Upper MississippiDr. L. M. Roberts, Little Falls

Washington CountyDr. W. R. Humphrey, Stillwater

West Central Minn.....Dr. B. M. Randall, Graceville

Wright CountyDr. E. A. Phillips, Delano

THE CHAIRMAN: Inasmuch as 20 constitute a quorum,
we will declare the house duly constituted and will pro-
ceed with the business of the day. What will you do with
the Auditors' Report?

(Upon motion, duly seconded and carried, the Report
was accepted.)

THE CHAIRMAN: We will have the Secretary's Report,
general and executive.

The Secretary read the following report:

SECRETARY'S REPORT

The active membership of the Association this date is
1,952. In addition to these, dues have been received from
thirteen members, who have died during the year. There
are also four honorary members. This makes a net gain of
sixty-eight members over the membership reported a year
ago. Following is a list of the membership by societies:

| | |
|---------------------------------------|-----|
| Aitkin County | 6 |
| Blue Earth County | 32 |
| Blue Earth Valley | 24 |
| Camp Release District..... | 42 |
| Central Minnesota District | 16 |
| Chisago-Pine County | 15 |
| Clay-Becker County | 25 |
| Dodge County | 9 |
| Freeborn County | 16 |
| Goodhue County | 16 |
| Hennepin County (1 deceased)..... | 454 |
| Houston-Fillmore County | 26 |
| Kandiyohi-Swift County | 18 |
| Lyon-Lincoln County | 18 |
| McLeod County (1 deceased)..... | 17 |
| Meeker County | 10 |
| Mower County | 18 |
| Nicollet-Le Sueur County..... | 17 |
| Olmsted County (1 deceased)..... | 237 |
| Park Region (2 deceased)..... | 36 |
| Ramsey County (2 deceased)..... | 301 |
| Red River Valley | 55 |
| Redwood-Brown County | 29 |
| Rice County | 24 |
| St. Louis County | 191 |
| Scott-Carver County (2 deceased)..... | 14 |
| S. W. Minnesota District..... | 51 |

| | |
|--|----|
| Stearns-Benton County (1 deceased) | 47 |
| Steele County (1 deceased) | 13 |
| Upper Mississippi (2 deceased) | 70 |
| Wabasha County | 11 |
| Waseca County | 13 |
| Washington County | 14 |
| Watsonwan County | 7 |
| West Central | 23 |
| Winona County | 20 |
| Wright County | 17 |

Total net membership (13 deceased)1,952

Grand total1,965

Legal expenses have been increasing from year to year and this year totaled \$3,739.25, which is about \$1,000.00 more than last year. Below is a statement of the amounts paid in each of the actions:

| | |
|--|----------|
| Doran vs. Mankato Clinic | \$ 77.00 |
| Hadd vs. Schlutz | 25.00 |
| Singer vs. Bossingham | 166.65 |
| Krueger vs. Bossingham | 66.60 |
| Martinson vs. Boeckmann | 40.00 |
| Hanson vs. Schlutz | 130.00 |
| Johnson vs. Urstad | 78.00 |
| Korman vs. Hagen | 299.15 |
| Pickar vs. Pierce & McDonald | 249.90 |
| Ritter vs. Barber | 207.00 |
| Costenoble vs. Tanner | 204.25 |
| Korman vs. Hagen | 279.02 |
| Johnson vs. Shipley | 213.30 |
| Backlund vs. Burch | 152.00 |
| Elofson vs. Adkins | 153.00 |
| di Berardini vs. Vercellini et al. | 127.00 |
| Lorenz vs. Lerche | 446.98 |
| Godtland vs. Stewart | 207.00 |
| Marka vs. Andrews | 399.80 |
| Hawkes vs. Andrews | 78.50 |
| Pickar vs. Pierce | 78.50 |
| Expenses of Dr. Workman in obtaining evidence concerning Dr. I. S. Benson (not brought into court) | 60.60 |

Total\$3,739.25

Three of these cases are still pending. Of the actions listed in the attorneys' report three, of the total seventeen, are known to have had private insurance. In each instance this insurance was carried in the Fort Wayne Medical Protective Company. It is optional for members of the Association, in actions instituted against them for malpractice, to avail themselves of the service of the attorneys employed by the State Association regardless of whether or not they have private insurance and thus are entitled to defense through the attorneys of the insuring companies. It is a well deserved compliment to the abilities of the attorneys employed by the State Association that practically all our members ask for defense by the Association attorneys. The Fort Wayne Medical Protective Company sells insurance to our members at a very reasonable rate and for that reason it seems advisable to allow the present situation to continue. Attention is called to the fact that within the last two years, several very substantial verdicts have been obtained against members of the profession. This further emphasizes the desirability of members carrying insurance which covers the payment of damages. While the total fund paid for defense is considerable, when divided equally among the members it amounts to only about \$2.00 per capita.

The details of the work of the Association have been handled in a very businesslike manner in the office of the Executive Secretary, Mr. J. R. Bruce. Full credit should be given especially to Miss Seibert for the very efficient way in which the actual detail secretarial work has been handled.

Six state associations have executive secretaries, who devote their entire time to the affairs of the Associations and their journals. Four of these, however, have a much larger

membership than that of the Minnesota State Medical Association. While there are certain advantages in this method of handling state association affairs, I feel sure that the expense of such an arrangement would be much greater than our present arrangement and not more efficient as regards routine detail work. The full time executive secretary plan would entail a considerable increase in cost of operation and this would have to be met through increased advertising or subscription revenue from the journal to avoid increasing Association dues. I, therefore, strongly recommend that the present arrangement be continued, which provides for a general secretary and an executive secretary.

The demands of my private work and the editorship of the journal make it imperative that I retire as secretary and I, therefore, respectfully offer my resignation, effective at the close of the present calendar year. I wish to express my appreciation of the co-operation which I have received throughout the four years that I have been secretary, on the part of the members of the Association. It is a great satisfaction to be able to state that during the four years which I have served as secretary, the Association membership has increased from about 1,500 to nearly 2,000. This shows a very healthy growth and promises well for the future.

Respectfully submitted,

CARL B. DRAKE,
General Secretary.

(On motion, duly seconded and carried, the Secretary's Report was accepted.)

DR. GEO. D. HEAD: If a motion is in order before we proceed with the next business, it seems to me that it is only the fine thing for us to do to express our appreciation of the services of our Secretary during these last four years. I should like to make a motion that by a rising vote the house show its appreciation of the services of Dr. Drake during the time of his incumbency.

(Rising vote and hearty applause.)

THE CHAIRMAN: Dr. Armstrong, the Report of the Editing and Publishing Committee.

REPORT OF EDITING AND PUBLISHING COMMITTEE

REPORT ON MINNESOTA MEDICINE

Our journal, MINNESOTA MEDICINE, is a publication of which every member of this society may well feel proud. An exceptionally high editorial standard has been maintained for the journal since its inception nearly eight years ago, and it is now generally recognized as one of the best medical journals published. The success which MINNESOTA MEDICINE has had in making a place for itself in medical literature is a source of satisfaction and pride to the Editing and Publishing Committee. The advertising pages have been kept clean and thoroughly in line with the policy of the American Medical Association in this respect. While it must be admitted that this policy affects the volume of advertising, it has been an important factor in maintaining a high standard for the journal.

Since MINNESOTA MEDICINE is your journal, it perhaps will not be out of place at this time to ask that each member of our society evidence a personal interest in it. The personal items department should be enlarged, but this can only be done through the co-operation of the members in sending to the editor items which they think will prove of interest. Members are also urged to give preference to MINNESOTA MEDICINE in replying to advertisements, all things being equal, whenever they are in the market for any of the articles advertised in it. If every member would find it possible to mention MINNESOTA MEDICINE to an advertiser at least once a year, it is believed that this would result in a large increase in advertising revenue. It would show our advertisers, all carefully selected and reliable firms, that our members read the journal and that they are interested in its continued success.

The net surplus for the year is lower than we have reported for several preceding years. One of the causes for this is the increased printing cost and another is a slight increase in fixed charges. The main reason, however, may be charged to the general business depression which has prevailed throughout the country for the past three years and particularly in our own section of the Northwest. With conditions improved, as we have every reason to expect at this time that they will be, an increase in advertising revenue is confidently expected.

Some effort has been made during the year to obtain subscriptions outside the state of Minnesota and we now have, roughly speaking, more than 200 paid subscribers to the journal outside our own state.

About 2,600 copies of MINNESOTA MEDICINE are required each month to cover our mailing list. This includes the society membership, the paid subscriptions of non-members, exchanges, institutions, and other complimentary copies.

J. M. ARMSTRONG, Secretary,
Editing and Publishing Committee.

STATEMENT OF OPERATIONS OF MINNESOTA MEDICINE OCTOBER 10, 1923, TO OCTOBER 4, 1924

REVENUE:

| | |
|---|--------------------|
| Advertising | \$7,628.10 |
| Subscriptions—Non-Members | 342.10 |
| Membership Subscription Allowance— 1,952 Members at \$2.00 each..... | 3,904.00 |
| Total | \$11,874.20 |

EXPENSES:

| | |
|--|------------------|
| Printing | \$4,970.31 |
| Paper Stock | 1,851.23 |
| Editorial | 1,695.14 |
| Advertising Commission (Bruce Pub. Co.) | 1,524.84 |
| Postage | 160.00 |
| Envelopes | 143.15 |
| Stenographic Service | 660.00 |
| Subscription Solicitation | 99.85 |
| Sundries | 167.14 |
| Total | 11,271.66 |

Net Gain for the Period October 10, 1923, to
October 4, 1924\$ 602.54

J. M. ARMSTRONG, Secretary,
Editing and Publishing Committee.

(On motion the report was accepted.)

The Secretary read the following report from the attorneys:

REPORT OF THE ATTORNEYS ANNUAL REPORT

October 4th, 1924.

Dr. Carl B. Drake, Secretary,
Minnesota State Medical Association,
Saint Paul, Minnesota.

Dear Doctor:

You have requested it, and we make report to the Association covering the work done by us during the year last past.

Hanson, as Administrator, vs. Schlutz, et al. This action was brought against Dr. F. W. Schlutz and Dr. F. H. Poppe and the Asbury Hospital to recover damages on account of the death of Lillian Hanson, a child, following an operation for pleural empyema. The case has been dismissed on the merits.

Flynn vs. O'Hara. The charge of malpractice in this case is in producing lacerations with resulting infection in the treatment of Manda Flynn in childbirth. There was a verdict in favor of Manda Flynn in the sum of \$1,600, which verdict, however, on motion for a new trial, was set aside. The action is still pending in Waseca County.

Backlund vs. Frank E. Burch and Charles E. Connor. The alleged malpractice in this case is in severing the tri-facial nerve or its branches, resulting in facial paralysis in

mastoiditis. Backlund has never brought his action on for trial and the case is abandoned.

Godtland vs. Stewart. The alleged malpractice in this case is in advising and permitting the administration of chloroform in the extracting of teeth, the condition of the patient being such that only nitrous acid could be administered, resulting in the death of the patient. Two cases were brought, one covering the death case and the other the loss to the husband, and expenses. The actions have been dismissed.

Martinson vs. Egil Boeckmann et al. The claimed malpractice consists in leaving within the lung cavity gauze and a safety pin, and in failing to remove it, all resulting in the death of the patient. Action has been dismissed as to Dr. Boeckmann but is pending as to the Saint Paul Hospital.

De Berardini vs. Vercellini and Geist. The claimed malpractice consists in improperly performing an abortion, resulting in profuse hemorrhages and general debility. Dr. Vercellini was the family physician and recommended an operation after consultation with Dr. Rothrock. The action has been dismissed.

Korman vs. Hagen. The malpractice claimed in this case is in the premature delivery in childbirth, resulting in a fracture of the femur and Erb's paralysis. There was an adverse verdict in the sum of \$8,000, which is pending on review in the Supreme Court.

Elofson vs. Adkins. The claimed malpractice consists in the improper application of a cast on the leg and in not removing it, causing infection and gangrene, requiring amputation of the leg. The action has been dismissed.

Walrath vs. Hammermeister. The alleged malpractice in this case is in injecting ether into the leg of the patient, thereby causing injury to the sciatic nerve, leaving the patient in a crippled and paralyzed condition. The patient was suffering from pains in the leg. There is also a companion suit brought by the husband. The actions are still pending.

Johnson vs. Shipley. (2 cases.) The malpractice is in introducing into the eye, eyeball and membranes, an acid or foreign substance which severely burned the eyeball and membranes and impaired the sight. Dr. Shipley intended to wash the eye, but in doing so, by mistake used a caustic instead. The case was treated as a liability case, authority was obtained to make settlement, and the cases were settled in the sum of \$750, paid by Dr. Shipley.

Johnson vs. Urstad. The claimed malpractice is the failure of Dr. Urstad to perform an operation to relieve against pleural empyema. The action has been dismissed.

Marka vs. Mankato Clinic. The claimed malpractice is in treating the patient for sciatic rheumatism and in failing to diagnose that the patient suffered from osteomyelitis or arthritis of the left hip joint, resulting in dislocation, shortening and ankylosis. Some of the members of the Mankato Clinic were insured in the Fidelity & Casualty Company and in the Fort Wayne Medical Protective Company, which companies participated in the settlement. Five thousand dollars was paid.

Costenoble vs. Tanner. The claimed malpractice consists in failing to diagnose diphtheria, from which the patient died. The action has been dismissed.

Anderson vs. Ulrich. The claimed malpractice in this case is that the plaintiff did not have surgical resistance; that she was sensitive to poison and in applying Protein sensitization tests, improper dosages were used, resulting in twenty-nine ulcers. The improper dosages, if any, were administered by the interne at the Minneapolis General Hospital. The action is for trial on October 14th.

Singer vs. Bossingham. The alleged malpractice is in failing to remove the afterbirth and in introducing a septic condition, which resulted in focal infection with a crippled condition of the arm. The action was once tried, with a verdict in favor of the defendant. A new trial was ordered by the court for errors in the trial, but the action has now been dismissed.

Ritter vs. Barber. In this case, it is claimed that Dr.

Barber failed to administer antitetanus serum in a cart-ridge explosion on July 4th. The case was dismissed on the merits.

Pickar vs. Pierce. The claimed malpractice in this case was in the negligent failure to perform a Cesarean operation and in failing to make a delivery in childbirth, resulting in the death of the mother. The case was dismissed on the merits. Plaintiff appealed to the Supreme Court, but later abandoned the appeal.

In addition to the foregoing, a number of legal opinions have been rendered to the Association bearing upon various questions. A number of claims of malpractice are pending, but no actions are brought thereon.

Very truly yours,

OPPENHEIMER, PETERSON,
DICKSON & HODGSON,
By Geo. W. Peterson.

(On motion, duly seconded and carried, the report was accepted.)

THE CHAIRMAN: I will call upon Dr. Rothrock for the reading of the Report of the Delegates to the meeting of the American Medical Association.

REPORT OF A. M. A. DELEGATES
REPORT OF THE PROCEEDINGS OF THE HOUSE OF
DELEGATES OF THE AMERICAN MEDICAL
ASSOCIATION AT ITS MEETING HELD
IN CHICAGO, JUNE 9-13, 1924

The first meeting of the House of Delegates was called to order by the Speaker, Dr. F. C. Warnshuis, at 10 A. M., June 9, 1924, in the Assembly room of the building of the American Medical Association in Chicago.

After hearing the customary addresses of the Speaker and the President-elect, Dr. William A. Pusey, the House proceeded to hear the reports of officers and Committees.

Report of the Secretary showed that there are now enrolled 90,056 members of the Association, 54,063 of whom are Fellows. It is possible for all members to become Fellows on application.

There are fifty-four constituent State and Territorial Associations, six of which have full time Secretaries.

The House of Delegates for the first time met in the Assembly room of the new A. M. A. building, which now houses all the various activities of the Association.

The subscription to the Journal has now reached 80,958, and from its size and contents has now reached a leading position among medical publications. The new popular magazine, "Hygeia," has reached a total circulation of 23,687 and in Chicago the contents have been used for radio broadcasting with the announcement that the material comes from Hygeia, through the American Medical Association.

From Report of Judicial Council: Periodic Health Examination by Lay Organizations.

Following the commitment of the Association at its San Francisco Session to the principle of encouraging periodic medical examinations for those who apply and even preceding this it has come to the notice of the Judicial Council that numerous commercial organizations have been formed who employ recent graduates or hard pressed practitioners to make these examinations at very low per capita rates, ranging from \$2.00 to \$5.00, and then sell this service to the individual for prices ranging from \$10.00 to \$25.00.

It was disclosed that some members of the Association, some even high in its councils, had unthinkingly lent their names as references, not understanding the use that was to be made of them. It was disclosed that some of these Companies are stock companies, one of which was reported to have an authorized capital stock of \$400,000 and one Company claimed to have 8,000 doctors listed as examiners.

It is the judgment of the Judicial Council that if such examinations are to be made they should be made independently by the physician, the examination should be thorough and should be charged for accordingly at customary rates.

ABSTRACT OF THE COUNCIL'S REPORT

MEDICAL EDUCATION

1. Although the total number of medical schools has been reduced from 160 to 80, the number of high grade, better equipped colleges has been increased from 2 to 74.

2. The total number of medical students was reduced from 28,142 in 1904 to 12,930 in 1919, but since 1919 the enrollments have been increased by nearly 1,000 students each year, the total number of students at present enrolled being approximately 17,808—the largest number since 1912.

3. The number of graduates of medical schools, likewise, was reduced from 5,747 in 1904 to 2,670 in 1918, but since 1918 there has been a rapid increase interrupted only by the war class which graduated in 1922. An estimate indicates that in 1927 there will be 4,750 graduates, the largest number since 1908.

4. The higher entrance requirements and the other improvements made in medical education, therefore, are not causing a dearth in the numbers of either medical students or graduates. As a result of the changes, however, there has been a positive increase in the number of graduates who are better qualified, both educationally and professionally, from 267 or 5 per cent of all graduates in 1906 to 2,964 or 95 per cent of all graduates in 1923.

5. Although the number of medical schools is only one-half of what it was in 1904, the capacity has been greatly increased. Instead of only 156 students and only 36 graduates for each college on the average in 1904, now each college on the average has 223 students and in 1927 will turn out about 60 graduates.

PHYSICIANS TO POPULATION

6. The United States now has one physician for every 724 people as compared with one to 1,087 people in the British Islands and one to about 2,000 people in the countries of Central Europe.

7. Although the number of physicians in rural districts is smaller, this does not mean in all instances a decreased medical service, since the better means of rapid transit enable one physician to take care of a larger area than heretofore. The scarcity of physicians in rural communities is more than offset by a great oversupply in the cities.

RESOLUTION ON THE NATIONAL PROHIBITION ACT

This question comes before the House of Delegates each year but we have been able to accomplish nothing in the past.

According to present ruling a physician is permitted by law to prescribe only one pint of whiskey at intervals of ten days for the same patient. This ruling was the result of abuse of their privilege by certain unscrupulous members of the profession. Now it is contended that one pint in ten days is an infringement upon the rights of the physician in attempting to dictate the amount and dosage of a useful drug. The following resolution was passed:

Resolved: That the House of Delegates of the American Medical Association expresses its disapproval of those portions of the National Prohibition Acts which interfere with the proper relation between the physician and his patient in prescribing alcohol medicinally; be it further

Resolved: That the House of Delegates of the American Medical Association instruct the Board of Trustees to use its best endeavor to have repealed such sections of the National Prohibition Acts as are in conflict with the above resolution and also use their best endeavor to have the Commissioner of Internal Revenue and the Prohibition Commissioner issue revised instruction on the use of the prescribing of alcoholic liquors for medicinal purposes by physicians.

The election of officers resulted as follows:

President—Dr. William D. Haggard, Tennessee.

Vice President—Dr. E. B. McDaniel, Oregon.

Secretary—Dr. Olin B. West, Chicago.

Treasurer—Dr. Austin A. Hayden, Chicago.

Speaker of House of Delegates—Dr. F. C. Warnshuis, Michigan.

Vice Speaker of House of Delegates—Dr. Rock Slyster, Wisconsin.

Vacancies on Board of Trustees were filled as follows:

Dr. J. H. Walsh was elected to succeed Dr. Frank Billings.

Dr. E. B. Heckel was elected to succeed Dr. Wendell Phillips.

Dr. Thomas McDavitt was elected to succeed himself.

Dr. George H. Simmons, who for the past 25 years has been Editor of the Journal and General Manager, and under whose supervision the Association has reached its high state of organization and has been brought to its present point of efficiency, has tendered his resignation and it was voted that he be made Editor and General Manager Emeritus at a salary of \$5,000 a year.

When Dr. Simmons retires Dr. Olin B. West will become Acting General Manager and Dr. Morris Fishbein, Acting Editor of the Journal, and Will C. Braun, Acting Business Manager. All to serve until the next annual meeting of the Board of Trustees the first Friday of February, 1925.

This being the year for reapportionment, the representation of the various states in the House of Delegates will in the future be on the basis of one delegate for every 950 members or fraction.

According to the reapportionment Minnesota thereby gains an additional delegate and will be represented in the future by three instead of two delegates.

Atlantic City was chosen as the next place of meeting, subject to the action of the Board of Trustees.

J. C. LITZENBERG,

J. L. ROTHROCK.

(Motion to accept the report duly seconded and carried.)

THE CHAIRMAN: Report of Committee on Public Policy and Legislation, Dr. Christison.

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION

September 10, 1924.

To the President and Members of the House of Delegates of the Minnesota State Medical Association.

Gentlemen:

Owing to the fact that the Legislature of the State of Minnesota was not in session during 1924 the activities of your Committee on Public Policy and Legislation have been necessarily limited. We have co-operated with your Committee on Public Health and heartily endorse the recommendations made in their report.

During the sessions of the Legislature of the State of New York we received almost daily bulletins covering the activities of the Committee on Legislation of the Medical Society of the State of New York.

It would seem from these reports that this Society maintains an office at Albany and has a full time man covering the legislature during the entire session. Whether this is feasible in Minnesota or not your Committee does not know but the subject is worthy of consideration. Telegrams were sent to Governor Smith and Senate Majority Leader James M. Walker at Albany, at the request of Dr. James M. Vanderveer, the Chairman of the Legislative Committee of the New York Society, in the name of this Association, urging the passage of bills relating to the practice of the cults.

A request was received from Dr. W. C. Woodward, Executive Secretary of the Bureau of Legal Medicine and Legislation, of the American Medical Association, requesting a transcript of the evidence in a suit brought to test the constitutionality of the Chiropractic law in Minnesota. Interviews with Judge H. D. Dickinson, of Minneapolis, before whom the case was heard, and with Attorney General Hilton, disclosed the fact that there was nothing of value in the evidence and Dr. Woodward was so informed.

At Dr. Woodward's suggestion letters were sent to the Senators from Minnesota and to each of the members of the finance committee of the Senate, urging modification of the Harrison Narcotic Act, Reduction of the Tax Rate on

Earned Income, and favoring the deduction of physicians' expenses incurred in post-graduate study and in attendance at medical meetings, in the computation of Income Tax.

Letters have been mailed to the chairmen of the Legislative Committees of all County Societies, or to the Presidents or Secretaries of these component Societies, urging them to get in touch with the various aspirants for legislative honors and urge upon them the advisability of informing themselves on medical legislation and to point out to them before they are elected, the necessity for proper regulation of the practice of medicine and surgery.

It is recommended—first, that if possible a full time man be employed during the legislative session, and second, that if any definite legislation is desired by this Association it be formulated at this session and put before the prospective candidates.

J. T. CHRISTISON,

J. G. CHASE,

CHAS. B. WRIGHT,

Committee on Public Policy and Legislation.

DR. J. T. CHRISTISON: Since that report was written we have received a communication from Dr. W. C. Woodward, the executive secretary of the Bureau of Legal Medicine of the A. M. A., asking us to endorse several items. First of all,—I am not going to read all of this, just simply the headings—the regulation of the sale of ipe and other caustic substances. Second, the amendment to the National Prohibition Act, removing present legislation which, it is pointed out, interferes with the relations of physician to patient. Third, the Harrison narcotic tax. Fourth, regarding cosmetics, hair dyes, etc. Fifth, regarding the organization of federal health activity. Sixth, exemption of traveling expenses to and from medical meetings from inclusion in the income tax. We also have here a copy of the resolution which Dr. Rothrock read to you. Dr. Woodward asks in his letter that this society go on record as favoring the passage of these bills.

(A motion was duly seconded and carried that the report be accepted, adopted and published at the earliest possible convenience.)

THE CHAIRMAN: Dr. Baker, the Report of the Committee on Sectional Work.

REPORT OF COMMITTEE ON SECTIONAL WORK

For some years our State Medical Meetings have had two sections—Medical and Surgical. Your committee, after careful consideration of the advisability of changing this plan, has come to the following conclusion:

While we do not deny the importance of any special field of medicine, there is no general demand and we do not feel that any subject merits a special section. Instead of creating more sections, we wish to bring to your earnest consideration the advisability of returning to our old custom of having one general meeting. It is well for the surgeon to listen to the medical man, the general practitioner to the specialist and vice versa.

We believe that a State Association should not be a place for specialization. For those seeking this, there are other and better avenues. We believe that our state meetings should consider the common good of all the people as well as all the practitioners of this state and that we should consider these problems together.

We believe that a properly functioning program committee will see to it that each subdivision of medicine will receive the attention which it deserves. If we do this each may know, hear and partake in all that transpires and he will return home with a more charitable and sympathetic view of his brother practitioners and with a broader understanding of the problems of the medical profession.

Our numbers are not too large for successfully carrying

out this plan for they are rarely as large as most of the sectional meetings of the A. M. A.

An example of a great success, in a one section meeting, is the Tri-State Medical Association. This holds yearly a four-day session covering the entire field of medicine and surgery. The attendance at these meetings has been as high as fifteen hundred.

A. C. BAKER,
W. F. BRAASCH,
V. C. HUNT.

A MEMBER: I move we accept the report.

DR. W. A. JONES: I wonder if the time is not approaching when most state associations will do a little better than they have done before in mixing clinics with their papers. It seems to me that the Tri-State Society Dr. Baker has referred to has accomplished wonders in this direction, and I believe that we could make our state association a much more valuable aid if we incorporated as we did at Duluth a few papers and many clinics. I believe the men would get more out of it and it would be a much more interesting and satisfactory meeting. I wish this matter might be taken up for consideration.

DR. GEO. D. HEAD: It strikes me that possibly before taking rather hasty action upon this recommendation of the Committee without due consideration it might be well for us to know exactly the situation from the preceding chairmen of the sections as we are at present organized. It has always seemed to me that we ought to encourage as much as possible the presentation of the work of the various members of our association at our state meeting, and especially to encourage young men in any research or clinical work that they may wish to present. Now if we adopt the one session idea and go back to our old plan, I for one feel that it has many strong points, this meeting together in one general session. Nevertheless, with our large association and our growing membership, isn't it going to cut off the opportunity for many of the younger men in the profession to be encouraged to come in here and present their work? I would not like, for one, to vote for a method of organizing our program which would have a depressing effect upon the younger man in the profession. It seems to me that it is very important for us to know whether or not the chairman of the surgical section has had more papers offered on his program this year than he could well accommodate in the program, and the same of the medical section.

I would like to make an amendment to Dr. Jones' motion therefore, that the Chair appoint a special committee to take up the report of the Committee on Sectional Work and report at the last meeting of the House of Delegates. Perhaps Dr. Jones would be willing that that amendment should be accepted; that a special committee be appointed by the Chairman to investigate this side of the matter before we finally vote.

DR. W. F. BRAASCH: Before voting further on the question, Mr. Chairman, may I simply say that it is the intention of this Committee not to shorten the number of papers and to abbreviate the program at all. It is scarcely within our province to detail the programs, that is, to set the program to the extent that we had planned. However, we wanted to incorporate the idea of Dr. Jones. Now in adopting this method instead of shortening the program we would lengthen it. In other words, the point of our idea

was to have clinical presentations, case reports, slides and illustrations, pathological demonstrations, things of that type, limited possibly to eight or ten minutes, much the same as they do in the Tri-State Assembly. Now you take for instance a one-day program of the Tri-State Assembly embodies a good deal more than our entire program does in the two sections this year. Instead of curtailing the opportunity it would increase the opportunity for the presentation of the subject by adopting that method. We did not think it was our province to go into that in detail, but that was our intention.

(The motion to accept the report, without adoption, was duly carried.)

DR. V. C. HUNT: I think in answer to the question that Dr. Head raised, the atmosphere can be cleared in just a few moments. Regarding the difficulties concerning getting papers, Dr. Tuohy I am sure in a very few minutes can give his report of the work in getting the Medical Section rounded up.

DR. E. L. TUOHY: I had no difficulty in getting papers for the Medical Section, and I think the Surgical Section had the same experience. Many papers were offered. The question may be answered directly as outlined by Dr. Braasch, but another feature involved has to do with the ultimate welfare and standing of our state journal. If too many of the papers or discussions are in the form of clinics, a valuable source of material for the publication of the journal is lost, and while a considerable number of papers may always be available for publication, it is just possible that they might not represent the state as a whole as well as if it were possible to draw some of this material from these meetings. I would feel, therefore, that it would be advantageous to study the matter out closely. The giving of a program, however, in which clinical demonstrations bear a part must certainly be a work of the future, because it has been shown repeatedly already that that type of meeting will draw more attention and better results than papers alone.

DR. W. A. JONES: I make the motion that a change in the by-laws be made providing for the return to the one section, to be voted on at the meeting tomorrow according to the constitution. I also request that the officers or the Executive Committee order the by-laws so that they may conform to the different sort of meeting. I would like to say that it has been my experience, and I think Dr. Tuohy will agree, that the clinical reports are much better and much more frequently read than these massy papers, and I think it would increase the popularity of the journal rather than to decrease it.

THE CHAIRMAN: I would like to know what Dr. Drake thinks about that. Do you think that the clinical meetings bring out the material in such form as to be available for publication?

THE SECRETARY: I do not know that I can answer that question inasmuch as in MINNESOTA MEDICINE we have published very few case reports. The reports of the proceedings of the Minnesota Academy and the Minneapolis Surgical Society are about the only case reports that we publish. We haven't had more than perhaps half a dozen additional case reports in the last year. I think probably the members of the House of Delegates know pretty well

what they read. I feel this way about it, that we get a good many case reports in the meetings of the hospitals nowadays. I do not think there is any more valuable way of getting information than by reading such reports. The formal paper is a very valuable part of a state medical publication, but I think that possibly the papers that are presented could be given in an abstract form at the meetings, and we could get in therefore a greater number of papers. If we have a combined section as proposed, we will have to cut the presentation time down in order to get the same number of papers in that we have in the two sections now.

If this matter is allowed to go in the form of a motion that a special committee present it tomorrow, we will have to wait a year. If it is the wish of the House of Delegates to have a common meeting throughout the convention next year, the motion should embody that at this time; that is, have the proposition before the House at this time to be acted on tomorrow. Dr. Jones' motion ought to embody that, and I do not think it did. Will you ask Dr. Jones to repeat?

DR. W. A. JONES: I would like to move that Dr. Baker's recommendation for the single meeting be adopted at the next meeting of the House of Delegates, and that the Program Committee be instructed to put on any kind of program they may see fit, but to embody the clinical material for the presentation to the association as much as possible. I think that is really the substance of the motion that I intended. My intent is to get the association to combine both papers and clinics, hoping that clinics will predominate.

DR. W. A. COVENTRY: May I ask for the reading of the by-laws to cover that subject?

THE SECRETARY: Under Chapter VIII of the By-Laws there is a provision made in Section 1 for (reads) "A Committee on Scientific Work, consisting of two sections." In Section 2: "For medical advancement and scientific work the Association shall be divided into two sections to be designated, 1st, Section on Medicine, 2nd, Section on Surgery, under which shall be grouped the appropriate subdivisions represented by the special branches of Medicine and Surgery respectively." Under Chapter XII—Amendments: "These By-Laws may be amended at any annual session by a majority vote of all the delegates present at that session, after the amendment has lain on the table for one day."

DR. W. A. COVENTRY: May I ask for a point of information? If I understand Dr. Jones, my idea is that you do not amend the by-laws but offer a recommendation for the committee next year. If you are going to amend the by-laws it has to be introduced today and acted on tomorrow. If you are not going to do that, it means that there will be two chairmen and two secretaries for the two sections, and under Dr. Jones' recommendation it will be possible to combine these, that is, the secretaries and the chairmen of the two sections get together and arrange a program as they wish. If you have only two sections for one part of the day, that is enough to cover the point without necessarily amending the by-laws. If you amend the by-laws you may want to re-amend them again next year, and you will get a lot of confusion before you get through with it.

DR. J. L. ROTHROCK: Inasmuch as I was the one who started the establishment of this sectional arrangement, I

would like to state to the delegates the reason why that was done. It was found that previous to that we sometimes met in the smaller towns where there was not an adequate hall to accommodate all those who wished to attend the sessions. The places of the meetings were small. It was also believed that we might be doing just twice the amount of work by having two sections. An arrangement at that time was made and intended that a certain number of these sessions should be together, that is, combined sections, and a portion of the time spent in that way. At those times symposiums on various subjects would be discussed. In the larger cities of course there are usually halls adequate for housing all of the association, but sometimes the halls that we were meeting in were crowded and it seemed to a number of us who thought of this plan that it would be a good plan and that we might just double the amount of work we were doing. We seemed to be doing a very creditable amount of work for a large association like a state association. That was why this change was made. Previously, I might say, the getting up of the program was left to the secretary of the association, and we thought that we would get better programs if we had a chairman for them, and the chairman and secretary get up the program.

I cannot see now why it would not be a good idea to continue on this plan but make some arrangement for combined sessions. That will cover the demand which seems to be present today. As far as Dr. Braasch's statement is concerned, that one session could cover the same amount of ground as both, I can't quite see how that is possible in a limited time. Unless the days of the meeting were extended, I can't see how it would work out.

DR. GEO. D. HEAD: The reason why I made the amendment to Dr. Jones' motion which I did was because it seemed to me that this was a radical change from the method that we have been following for some years, and it struck me that by making a little bit of a change in the method by which the chairmen of the different sections presented their material we could accomplish with our two section arrangement almost all that we could by having a one section program, and besides we could obviate some difficulty. Now there is no question at all but what in this state gradually but surely we are developing men who are interested in and practice the medical side and men who practice and develop to a greater degree year after year the surgical side. While it is of course advantageous for those men to get together in common conference over certain classes of disease, those conferences can all be well arranged by having a combined program such as we have tomorrow in our general session. That can be enlarged and more programs of the two sections put together if necessary. I do not believe it is conducive to the best work in medicine for men interested more in the medical side of practice, medical, diagnostic, and consulting work, to be compelled to listen to programs in which the surgical considerations predominate, and vice versa.

Now can't we proceed with our same arrangement of two sections and still provide all that Dr. Braasch has suggested? Could not this year a common program where the two sections meet together be devoted entirely to the clinical presentation of cases, instead of having it that each section

have presented such papers as are of interest either to the surgical or the medical section. Let those papers be presented to men interested; then let us all come together in these common sessions and have those clinical sessions and have no papers at all but have many short presentations, a very well boiled down, concentrated program upon the clinical side of medicine, presenting practical cases. It seems to me that it would be very radical for us to change our plan of working without more due consideration.

I therefore wish to make an amendment to Dr. Jones' motion, that the recommendation of the Committee be referred back again to this same Committee, the Committee on Sectional Work, for another year's consideration.

DR. W. H. WORKMAN: I do not see any reason for discussing this thing at all. It is already provided for in the by-laws. Article VIII—Sessions and Meetings, Section 1 provides (reads): "The Association shall hold an Annual Session, during which there shall be held daily General Meetings, which shall be open to all registered members and guests." We do not have to change our constitution or by-laws or anything else; we can have the clinical meetings under our present regulations. We already have one general session in an afternoon; that can be made a whole day. I do not see anything to change at all.

DR. W. F. BRAASCH: I disagree with Dr. Head in the statement that this is a radical change. I wonder if he has ever attended a meeting of the Tri-State Assembly and if he has seen the enthusiasm and the general approbation with which those programs are received. Everybody enjoys them; everybody can get what he wishes. Dr. Baker says in his report that it does a surgical man good to hear a discussion on medical subjects and it does a medical man good to hear a discussion on surgical subjects; in other words, most of us here are general practitioners, and I think it would do them good to hear both sides. It appears to me that this method is very elastic and offers large opportunities in the form that is to be pursued. This method is not radical either, because it has been adopted by several state associations.

DR. GEO. D. HEAD: I didn't mean it was radical—I knew that programs have been arranged along this line; but I meant it was a radical change for our own association.

DR. J. G. CROSS: Is Dr. Head's amendment seconded?

THE CHAIRMAN: I think not.

DR. J. G. CROSS: I would like to second his amendment, and in doing so may I ask that the report as read by Dr. Baker be reread as far as it relates to the desired single sections?

(At the request of Dr. Drake, Dr. Baker read the following:)

DR. A. C. BAKER: "While we do not deny the importance of any special field of medicine, nevertheless there is no general demand and we do not feel that any subject merits a special section. Instead of creating more sections, we wish to bring to your earnest consideration the advisability of returning to our old custom of having one general meeting. It is well for the surgeon to listen to the medical man, the general practitioner to the specialist and vice versa."

DR. J. G. CROSS: You simply bring to the attention of the society the desirability of these single meetings.

DR. COVENTRY: Question.

THE CHAIRMAN: You have heard the motion as made by Dr. Jones and I think seconded by Dr. Braasch with reference to presenting this matter to the House of Delegates tomorrow. As many of you as are in favor signify by saying aye. Contrary, no. Carried.

And the amendment of Dr. Head, that the matter be referred back and reported on one year from now. Is that the amendment, Dr. Head?

DR. GEO. D. HEAD: To the same committee for one year.

DR. W. A. JONES: I cannot refrain from talking about this more. It seems to me that this is unnecessary to wait a year to try out some wholesome experiment. We can put a medical and clinical section over at one session just as well as not, if we will do it. I should like to introduce another resolution while I get a chance, authorizing and directing the Program Committee to follow this out. I hope Dr. Head's amendment will not prevail.

DR. J. C. LITZENBERG: I rise to a point of order. The original motion has been acted upon, and that disposes of all amendments.

DR. J. W. BELL: I think the Chair perhaps erred slightly. The amendment should have been considered first, and I think it might be well for us to go back and take it up.

THE CHAIRMAN: I stand corrected.

DR. J. C. LITZENBERG: I rise again to a point of order. The motion to reconsider must be passed before we can go any further.

DR. GEO. EARL: Can we not secure what we are all striving to get by having Dr. Head now make a motion that the Chair appoint a committee to report to us on Dr. Jones' motion tomorrow? That will serve the purpose and we will vote on this question tomorrow, and we will also have the advantage of Dr. Head's committee.

DR. G. S. WATTAM: I would like to ask this question: Could not Dr. Jones' motion be amended tomorrow if it is felt necessary?

THE CHAIRMAN: I understand that tomorrow it has to be settled. I am going to ask Dr. Head if he will make a motion to get me out of hot water.

DR. GEO. D. HEAD: I will be very glad to do that. I move you that the Chair be authorized to appoint a special committee to make a special report upon this matter at our session tomorrow.

(Motion seconded and carried).

THE CHAIRMAN: I will appoint on that committee Dr. Braasch, Dr. Head and Dr. Jones.

The Report of the Committee on Cancer, Dr. Hunt.

REPORT OF COMMITTEE ON CANCER

To the President and House of Delegates of the Minnesota State Medical Society: Your Cancer Committee begs to submit the report of its activities during the past year.

A review of the discussion precipitated by the report of this Committee at the meeting of the House of Delegates on the first day of the State Society meeting in 1923 presents an interest in the subject of cancer control manifested for the first time. This discussion in itself has served as a stimulus to all members of the Committee to continue in behalf of the State Medical Society the conduct of the educational work as outlined and directed by the American Society for the Control of Cancer.

The constructive criticism offered after the presentation

of the 1923 report has resulted in the coalition of the Cancer Committee of the State Medical Society and the State Cancer Committee of the American Society for the Control of Cancer, which enables the Committee to carry on the activities of cancer control under the direction of the State Medical Society. As a result, the activities of this Committee have been conducted in the past year with increasing harmony in the membership of the State Medical Society. As stated in previous reports, it has been the opinion of the State Cancer Committee that it could best serve the interests of the State Medical Society by co-operating with the American Society for the Control of Cancer in its educational campaigns.

The campaign, as outlined in previous years, was again conducted in Minnesota throughout the week of November 11th to 18th in 1923. During that week statewide publicity was given the most salient facts about cancer, through the organization and activities of seventy-six County Cancer Committees. Through these organizations short talks were given, and literature, furnished by the National Society, was read before many audiences, including churches, fraternal organizations, clubs, et cetera. Thirty-one public meetings were held under the auspices of County and District Medical Societies. The newspapers throughout the state contributed liberally of space for articles dealing with the known facts about cancer, furnished by the National Society. Other activities consisted of five cancer clinics, two radio talks, the showing of the film, "The Reward of Courage," and slides in many theatres, et cetera.

Your Committee believes that educational work should continue and desires the co-operation of the individual members of the State Medical Society. Also, the Committee wishes to follow the suggestion of the House of Delegates in the conduct of its work.

We desire at this time to express our thanks and appreciation to the members of the State Medical Society who have been active in the educational campaigns, particularly those who have acted as County Chairmen, and those who have contributed their time and money in the presentation of public lectures.

Respectfully submitted,

VERNE C. HUNT, Chairman,
A. C. STRACHAUER,
AARON F. SCHMITT,
HENRY WIREMAN COOK,
HARRY P. RITCHIE,
A. J. CHESLEY.

(Motion to accept the report duly seconded and carried.)

Dr. C. B. Lewis called attention to the entertainment planned for the ladies for Thursday: Tour of the State Reformatory, luncheon and band concert there, and visit to Watab Pulp and Paper Company's plant.

THE CHAIRMAN: Report of the Necrologists, Dr. McDavitt.

REPORT OF NECROLOGIST

We are again called on to chronicle the names of those who have laid down their burdens and gone to that bourne from whence there is no recall. All of these honored names have performed their allotted tasks with honor and credit to themselves and their communities and well deserve the encomium, "Well done good and faithful servant." Those of us who remain can only honor their memory by emulating their virtues. As indicating the uncertainty of this life the necrologist of last year, Dr. J. H. Adair, heads this list of our departed members. It is with high regard and admiration for lives nobly spent that we detail the list of our conferees "who have finished the course" and have gone to their reward.

FORMER PRESIDENTS

| NAME | ADDRESS | YEAR | DECEASED |
|------------------|-----------------|------|----------|
| Adair, J. H. | Owatonna | 1920 | 1/ 6/24 |
| Beebe, W. L. | St. Cloud | 1891 | 8/13/24 |
| Courtney, Walter | Brainerd | 1900 | 6/23/24 |
| Sneve, Haldor | San Diego, Cal. | 1912 | 7/.. /24 |

| | | |
|----------------------|--------------|----------|
| Dennis, W. A. | St. Paul | 11/ 8/23 |
| Douglass, H. E. | Blackduck | 6/14/24 |
| Egan, John M. | Minneapolis | 11/30/23 |
| Eggen, O. K. | Minneapolis | 3/26/24 |
| Gotham, C. L. | St. Paul | 4/28/24 |
| Haugen, O. M. | Fergus Falls | 5/25/24 |
| Hoffman, J. L. | Henning | 2/ 6/24 |
| Kirmse, Geo. W. | Minneapolis | 11/25/23 |
| Knickerbocker, F. H. | Staples | 11/17/23 |
| Landenberger, John | New Prague | 5/13/24 |
| Lufkin, H. M. | St. Paul | 7/ 6/24 |
| Lund, Theo. C. | Hutchinson | 2/25/24 |
| Ogden, B. H. | St. Paul | 6/12/24 |
| White, J. B. | Belle Plaine | 9/ 5/24 |
| Witherstine, H. H. | Rochester | 10/ 2/24 |

The deaths of the following are listed in our Medical Journals as having died in the ranks:

| | | |
|------------------|-----------------------|-----------|
| Cole, A. B. | Fergus Falls | 6/.. /24 |
| Bomberger, F. J. | Mapleton | 6/.. /24 |
| Chapman, O. S. | Minneapolis | 2/ 5/24 |
| Crommett, H. B. | Amery, Wis. | 2/ 6/24 |
| Davis, Geo. W. | Duluth | 5/.. /24 |
| Downer, Mary A. | St. Paul | 1/.. /24 |
| Dumont, Frank | Freeport | 7/.. /24 |
| Foster, Lyman P. | Minneapolis | 4/.. /24 |
| Herring, H. H. | Minneapolis | 6/.. /24 |
| Higbee, A. E. | Minneapolis | 4/ 3/24 |
| Lind, Alfred | Cuba (formerly Mpls.) | 6/.. /24 |
| McAuliffe, J. A. | Duluth | 3/23/24 |
| McCormick, S. D. | | 11/17/23 |
| Murdock, H. G. | Taylor's Falls | 8/ 8/24 |
| Quinn, J. A. | St. Paul | 12/27/23 |
| Seely, John S. | Faribault | 3/ 2/24 |
| Smith, D. Edmund | Minneapolis | 12/.. /23 |
| Nelson, J. C. | St. Paul | 3/13/24 |

(On motion the report was accepted.)

THE CHAIRMAN: Next is the Report of the Committee on Hospitals and Medical Education, Dr. J. C. Litzenberg.

REPORT OF COMMITTEE ON HOSPITALS AND MEDICAL EDUCATION

To the President and House of Delegates of the Minnesota State Medical Society:

Gentlemen: Your Committee on Medical Education and Hospitals has the honor of submitting the following report: FIRST—HOSPITALS:

In its work of raising the standards of hospitals the Council on Medical Education and Hospitals of the American Medical Association has adopted the plan of publishing a list of hospitals approved by it for the training of interns.

In addition to an investigation of each hospital by a representative of the Council from the home office at Chicago the Committee on Medical Education and Hospitals of the state in which any hospital applying for approval is located is asked to make an independent investigation and report to the Council. Your Committee was requested to make one such survey during the year, namely, of the New Asbury Hospital of Minneapolis. The survey was made and the hospital recommended for approval by the Council. Seventeen hospitals in Minnesota are now approved for the training of interns.

SECOND—MEDICAL EDUCATION:

The Committee on Medical Education and Hospitals of last year, headed by Dr. Braasch, made a very comprehen-

sive and valuable report on both undergraduate and graduate medical education in Minnesota.

Your present Committee will therefore not go into any detail concerning the present status of medical education in the state, but will first take up the recommendations of Dr. Braasch's Committee to see whether or not the profession of the state has profited by those wise proposals. Too often recommendations of Committees which have spent valuable time and concentrated effort on their work are literally thrown into the waste basket by the hackneyed motion, "I move the report of the Committee be accepted and placed on file." Therefore, your present Committee makes but one recommendation with the hope that the Committee next year will be instructed to concentrate all its efforts on education to be carried to the physician in his own locality.

The recommendation of Dr. Braasch's committee—

"That the University of Minnesota offer several courses of instruction at different periods of the year and possibly in a more concentrated form" has been carried out by the University.

In the spring, for two weeks, courses were offered "in a more concentrated form" in Medicine and Surgery, and in the fall for another two weeks in Pediatrics and Obstetrics and Gynecology, together with a one week's course in x-ray diagnosis, laboratory clinical and pathological diagnostic methods.

Another recommendation of last year's Committee was:

"That a system of graduate medical instruction be given by competent instructors in various portions of the state enabling the general practitioner to become familiar with recent medical progress." This has been taken up by your present Committee which begs leave to make the following report of its investigations with recommendations for putting it into effect: Certain states, notably Wisconsin and North Carolina have undertaken to take instruction to the practitioner. Time and space will not permit a detailed description of this work but the essential features of the plan are these:

Wisconsin. "The purpose of the courses offered in post-graduate medical instruction is to provide physicians, residing in a given locality, with practical demonstrations of the newer methods of diagnosing and treating disease. Clinics are held at a hospital conveniently located, illustrated lectures are given, and opportunity is offered for consultations with specialists. Arrangements may be made for a single clinic and lecture or for a series of weekly, bi-weekly, or monthly clinics and lectures. Arrangements for these clinics and lectures are made through co-operation between the local physicians under whose auspices the clinics and lectures are held and the Dean of the University Extension Division. Physicians enrolling for the course are charged a fee sufficient to cover part of the overhead expenses, the balance is paid from the small appropriation made for this work by the state legislature. The following courses, each consisting of one clinic and one lecture, are offered:

Internal medicine, radiology, pediatrics, dermatology and syphilis, neurology and psychiatry, genito-urinary diseases, orthopedics, laboratory diagnosis; diseases of the eye, ear, nose and throat; obstetrics and gynecology.

The courses are given by teachers from the University of Wisconsin and prominent professional men of the state.

In addition to these courses obstetrical films are exhibited and the cancer propaganda is conducted in harmony with the above courses by a committee of the State Medical Society of Wisconsin, illustrated by 125 slides.

North Carolina. In this state the work is also conducted by the University Extension Division.

Mr. Chester D. Snell, Director of the Extension Work, in a letter to Mr. R. R. Price, Director of the same work at the University of Minnesota, says:

"I should like to make it clear that the work which we are offering is regular post-graduate medical instruction, and is not devoted to clinics alone. Each class meeting last summer lasted about three hours, of which an hour and a half, approximately, was devoted to a lecture by the in-

structor and the rest of the time was taken up by clinical work. Some of the meetings lasted a whole afternoon when the classes got interested in the clinical work.

"We ran two circuits of six towns each last summer, and the total attendance in each circuit was one hundred each, or an average of seventeen in each group or class. This next summer we expect to run at least six circuits, and hope to have practically all the general practitioners in this state taking the work.

"Let me say that as far as we are able to judge, this work has been a tremendous success in this state, and we believe we have found a solution of the problem of how to give busy doctors post-graduate medical instruction without great expense or loss of time to them."

"The plan is briefly this: The University Extension Division, in co-operation with the Dean of the Medical School, serve in an organizing capacity. The best available instructor in the country is secured to give the course. Between ten and twenty physicians are assembled at five or six conveniently located towns accessible to the instructor on one day each week for twelve weeks. Each meeting consists of a one-hour lecture and from one to two hours of clinical work. Each group therefore receives a total of twelve lectures and twelve clinical demonstrations. The cost to each person is guaranteed to be not more than thirty dollars. Should the total receipts exceed the cost, the excess will be refunded pro rata.

"Post-graduate medical education is a necessity because of the rapid advancement in medical science. The average general practitioner cannot afford to be absent from his practice six weeks in order to take a course in residence at a cost of \$400 or \$500. What is now known as the 'North Carolina Plan' was inaugurated in the summer of 1916.

"Two instructors were appointed. Each was assigned to a circuit of six centers, which he covered in rotation every week for four months, a class thus being held in each city once a week. The classes were composed of physicians residing in these centers and their surrounding rural communities.

"The actual organization of the classes, and the planning of the instructors' routes and other executive work was carried out by the University Extension Division, while the more strictly medical problems, notably the selection of the instructors and the outline of the work, were in the hands of the Dean of the Medical School."

The experiment in these two and other states has been very successful. Your Committee believes that the profession of this state will welcome an opportunity to broaden its knowledge and to keep up with medical progress which some such plan will furnish at a minimum expenditure of time and at a reasonable cost.

Therefore your Committee recommends:

1. That the Committee on Medical Education and Hospitals be instructed to confer with Mr. Richard R. Price, Director of the Extension Division, and Dean Lyon, of the Medical School, as to the feasibility of the scheme. (Mr. Price and Dean Lyon have expressed to the Committee their willingness to co-operate with the State Medical Society in every possible way.)

2. If found to be practicable, to adopt a plan suitable to the peculiar conditions in Minnesota, and

3. Subject to the approval of the Council to put the plan into effect in co-operation with the Director of the Extension Division and the Dean of the Medical School of the University of Minnesota.

4. Finally your Committee believes that the plan can be made self-supporting but it realizes that in inaugurating any new scheme there may be some incidental expenses necessary; we therefore recommend that a small appropriation be made to insure success.

Respectfully submitted,

J. C. LITZENBERG, Chairman,
A. R. COLVIN,
E. S. JUDD.

DR. H. P. DREDGE: I move the adoption of the report—I do not say acceptance; I say adoption. And I would like

to ask what appropriation this Committee thinks would be advisable.

DR. J. C. LITZENBERG: Well, I do not know, but the only expense would be office expense, stenographic expense, a little printing, and things of that sort. I do not know what it would cost. Fifty to one hundred dollars probably would be the outside figure. As far as that is concerned, there would be reimbursement afterwards. Mr. Price, of the Extension Division, has expressed his willingness to do the executive work on this, and he is very enthusiastic about having the State Medical Society conduct this work through its own committee rather than to have it conducted simply by the University. He thinks that that is the way to conduct it because then it will be the State Society's own scheme, but he is willing to offer his services. I asked him if there was any available money in his appropriation, and he said no. Therefore we have made this last recommendation. I think a motion not to exceed one hundred dollars would probably cover it.

DR. R. T. EDWARDS: I would move, Mr. Chairman, that this report be adopted and that we make an appropriation of such money as is necessary, not to exceed one hundred dollars, for the work, subject to the approval of the Council. (Motion duly seconded and carried.)

THE CHAIRMAN: Committee on Public Health, Dr. Savage.

REPORT OF COMMITTEE ON PUBLIC HEALTH

In response to a letter from the chairman of the State-wide Publicity Committee your committee on April 15, 1924, met with Dean Nicholson and the director of the University Public Health Service and the Vice-president of the Hennepin County Medical Society to investigate the Public Health Service of the University of Minnesota.

The following statements were made by representatives of the Public Health Service. About 60 per cent of the University students are putting themselves through college either in whole or in part. Ninety per cent of those who report to the staff would probably not see any physician if it were not for the public health service.

The public health service refers a great many students together with their findings to their family physicians when they live in the Twin Cities, and their policy is to do this in those cases where they feel they are able to pay ordinary fees. They admit that the occasional case able to pay ordinary fees occasionally slips by them, but of what free institution is this not true?

In the judgment of your committee the great work they are doing is that of educating these young people to the value of regular examinations, to the value of reporting themselves early in case of sickness and last but not least the thousands of students are graduated educated to the value of regular medicine rather than being advocates of the cults.

As to the good accomplished among the student body there is no question. This is detailed in the April issue this year of MINNESOTA MEDICINE.

Your committee wishes to go on record as heartily endorsing the University Public Health Service.

For the first time the State Medical Association in conjunction with the University of Minnesota has put on a health exhibit at the State Fair. Dr. Wm. O'Brien, of the Medical Department, has had charge of the work and the medical association has paid the bills. The general scheme was outlined in the September issue of MINNESOTA MEDICINE.

At the 1923 session of the House of Delegates the Committee on Public Health for this year was requested to gather information throughout the United States relative

to the points of contact between the medical profession and the public. Forty-nine questionnaires were sent and thirty-three responded. Including Minnesota we have statistics from thirty-four states.

No. 1. Does legislation initiated by the medical profession meet with a fair degree of co-operation in your state or the reverse?

Excellent 6%, good 14%, fair 40%, poor 40%.

No. 2. Are the medical men of your state organized into legislative committees with reference to proposed legislation?

In nine states special organizations; in 24 states handled by the state committee; in one state no organization.

No. 3. Does your State Association or public health agency publish a journal devoted to medical and public health matters for the laity?

Six states do this including Minnesota and one state has a tuberculosis journal.

No. 4. Does your State Association or any component medical society approve or conduct systematic radio talks?

Kentucky, Ohio, Washington (state), Pennsylvania and Wisconsin do this. Approval of the idea expressed by Georgia, Iowa, Texas, Nevada. Minnesota hopes to begin such a program this fall.

No. 5. Have you a public health league or similar organization which develops contact between the profession and the public?

Fifteen states have, including Minnesota.

No. 6. Have you a state hospital for medical and surgical cases and if not through what channels are the poor in your rural communities cared for?

Twelve, including Minnesota, answer yes. Sixteen provide community care only. Six have an insane hospital or none.

No. 7. Are your hospital facilities for indigent tuberculous cases ample?

Yes 10; fair 10; no 10. No tuberculous cases requiring hospitals 2.

No. 8. Grouping together osteopaths and chiropractors, what is their percentage to medical men?

Unknown, 7. The balance of the states run all the way from 3% to 50% in Wisconsin. In Minnesota the proportion is about 20%.

No. 9. What are your state activities along the lines of child welfare?

Every state that answered is active in this line.

No. 10. Any other information showing points of contact between the medical profession and the public would be greatly appreciated.

Five states have lecture programs. One state offers occasional lectures and one gives state clinics. Kentucky, Georgia and Wisconsin have systematic public press articles.

If we analyze conditions in Minnesota from the standpoint of contact between the medical profession and the laity we find some satisfactory conditions as well as the reverse. Co-operation on the part of the state legislature is very far from what we could desire. Local county society legislative committees were organized two to three years ago and should be continued. The committee on legislation of the state association is helpless without general co-operation throughout the state. These committees should be active in the pre-election period.

We find two lay journals in Minnesota devoted to public health matters—one published by the Minnesota Public Health Association—the Northwestern Health Journal with a subscription list of over 10,000. This journal deserves the support of every physician in the state and should be in every doctor's waiting room. The second journal is the Popular Health Magazine which is privately owned and exists for private gain.

The Minnesota Public Health Association deserves more than passing comment.

In 1903 the Minnesota Anti-Tuberculosis Association was organized. In 1907 they had a paid executive secretary. In 1915 the name was changed to the Minnesota Public

Health Association. It is financed entirely through the sale of Christmas seals and this income this year was over \$100,000.00. Their activities include:

Clinics—tuberculosis, pediatrics and public health.

Tuberculosis clinics are conducted by county sanatoria men.

Pediatric clinics by specialists whose expenses are paid by the association. The public health clinic consists of a doctor and nurse who travel over the state in a Ford truck provided the counties have sold enough Christmas seals to pay expenses.

Four public health nurses were in the field this summer.

Health exhibits are loaned as occasion demands. They try to have them at local county fairs as well as at the state fair. They also send a health clown to these fairs.

Dr. Lohead will give health lectures anywhere in the state.

They distribute much public health literature free of charge. They publish at a loss the Northwestern Health Journal with a circulation of over 10,000.

The matter of radio broadcasting in Minnesota on public health matters by the medical profession has been a storm center of discussion. The consensus of opinion is that the name of the speaker shall not be announced unless he is a full-time teacher or public health worker and not engaged in the active practice of medicine. Your committee is convinced that to allow a relatively small number of active practitioners, whose names are announced over the radio, to broadcast public health talks, would create bad feeling and is not good policy. Five states or county societies broadcast public health talks and four states expressed approval of the plan. Your committee warmly endorses the plan if properly safeguarded. The two stations in Minneapolis have discontinued but if either of them reopens, broadcasting will probably be done under the auspices of the Statewide Publicity Committee. There are in our state 128 nurses doing public health work exclusive of the Twin Cities and Duluth. There are forty-six county nurses and thirty-seven counties have no nurse. These nurses are paid by various agencies—the local county commissioners, school boards, Red Cross or Minnesota Public Health Association. Olmsted county has a county health nurse, infant welfare nurse, a county maternity nurse and a school nurse.

Thirty-seven counties of the state support fourteen county tuberculosis sanatoria. This is in addition to Walker.

Minnesota is one of the twelve states out of thirty-four which are equipped to care for the indigent sick both general and tuberculous.

Some interesting features of work along these lines have been worked out in other states. The Ohio Public Health Association is the chief medium of contact between the profession and the laity. In addition they have a public health federation including dentists, druggists, nurses, hospitals, the public health association and physicians.

In Kentucky the county medical societies work in close co-operation with the Bureau of Child Hygiene and the State Board of Health. All local clinics are under supervision of the county medical societies. The State Medical Association and the State Board of Health are closely coordinated. The State Health Officer is the secretary of the State Medical Association, and therefore the state association guides the activities of the State Board of Health, which is the legal aim of the profession and is so recognized by the legislature and the public.

In Colorado the Denver City and County Medical Society conducts monthly public health lectures. They have a Colorado association for the protection of public health composed of many prominent laymen as well as doctors.

Massachusetts. "It is only a few months ago that our society first took up this matter of contact between the profession and the public, and we have spent most of our time investigating the possibilities. So far we are depending upon lectures which we insist shall be constructive, not argumentative, and the block material for the county newspapers. We are making contact through parent-teachers' associations, women's clubs, labor unions and any place

where they may want a lecturer. Each district society is asked to hold an occasional meeting in their district."

In Georgia they have a statewide health association composed of the state chamber of commerce, bankers, railroads and the medical profession. Also a state health council composed of medical associations, Red Cross, the tuberculosis association, Kiwanians, Rotarians, women's clubs, state agricultural society and Physical Education Association.

Texas. The medical profession is raising a considerable sum of money for a publicity campaign in order to gain public and legislative support.

From a study of the answers received one is impressed with the general recognition of the idea of the advisability of our profession developing contact with the public along public health lines. The basic underlying principle is to strive for an intelligent public viewpoint toward the medical profession.

Individual members of your committee have repeatedly had the idea of effort along these lines held up to ridicule by high grade medical men. They say that we are not in a position to do anything as long as we harbor crooks and abortionists and ignorant doctors in our medical societies and allow them to practice medicine.

They say get rid of them first and we can present a clean front to the public and propaganda will not be necessary. Then they add, "How are we going to do it?"

Such types exist in all professions. Your committee believes that the same principle that governs in the acceptance of a life insurance applicant, namely a confidential report on the moral hazard involved, should also govern in the selection of candidates by the medical schools, namely, a confidential report on character. Those who cannot measure up to established standards should be rejected.

However, if we allow the public to rate the entire medical profession by its relatively few crooks we commit a gross injustice to ourselves.

RECOMMENDATIONS

(1) That local committees on legislation be continued in every county society in the state.

(2) That local committees on public health in every county society take an active interest in all local public health matters.

(3) That radio broadcasting on public health matters be undertaken as soon as possible under the auspices of the statewide publicity committee, that such talks be announced as being given under the auspices of the Minnesota State Medical Association and the _____ County Medical Society, but that the name of the speaker shall not be announced if he is engaged in the active practice of medicine.

(4) That the Minnesota Public Health Association be asked to broaden the scope of their work to include the sending of selected articles on public health to the newspapers of the state at regular intervals and to obtain the newspapers' co-operation for their publication.

(5) That the association indorse the Northwestern Health Journal and permit the management to state that it is the official journal for the public of the Minnesota State Medical Association.

(6) That the secretary of the Minnesota State Medical Association transmit to the Board of Regents of the University of Minnesota, the recommendation of their House of Delegates that in addition to educational requirements to the medical school the character of applicants for admission be ascertained by confidential reports and that those not measuring up to a proper standard be rejected.

(7) That the state medical association continue their part in the State Fair Public Health exhibit.

DR. GEO. D. HEAD: It seems to me that we have had a number of reports made this afternoon by various committees in which recommendations have been made. I would like to move in accepting the report of this Committee that when we have completed our business for the afternoon the House of Delegates form itself into a Committee of the

Whole to take up the recommendations in the order in which they were presented by these various committees and act upon each recommendation separately.

DR. J. C. LITZENBERG: Something of the same thought had entered my mind on account of my one year's experience in the American Medical Association. All of these reports are referred to special committees which are appointed beforehand, and those reports are digested by the committees and a condensed recommendation brought back by the committee. It saves the trouble of the committee as a whole and saves time in acting upon them. I wonder if there is any provision, Mr. Secretary, for regular recommendation of these reports to committees. Is there any such provision in the by-laws and constitution?

THE SECRETARY: There was a provision made last year for reference committees for recommendations of this sort to be referred to. Of course all these reports are not recommendations of committees, and all that we are doing is to refer the recommendation of one committee to another committee. Reference committees may be appointed at the wish of the House of Delegates or at the discretion of the President.

DR. J. C. LITZENBERG: Then I think the purport of your motion would be that this be referred to a reference committee on public health.

DR. GEO. D. HEAD: No, I believe there are immense advantages in organizing ourselves into a committee of the whole. I am inclined to think we will have time to do that very thing this afternoon. We have certain standing committees, haven't we?

THE SECRETARY: We have certain standing committees which act as reference committees.

DR. GEO. D. HEAD: Could those standing committees be read—could those reference committees be read?

THE SECRETARY: The reports we are having this afternoon are the reports of the standing and reference committees. For instance, the committee for which Dr. Adams read the report, on sectional work, was a reference committee.

DR. GEO. D. HEAD: That is, some of the standing committees would be reference committees? If the motion was made to refer these matters to the reference committee it would mean referring them back to the same committee again in many instances?

THE SECRETARY: No, a new reference committee could be appointed.

DR. GEO. D. HEAD: Well, I think, Mr. President, that I would like to renew my motion. I believe it would be wise for us to try out this and see if we cannot act as a committee of the whole upon these valuable recommendations of these committees. It does seem a shame, as Dr. Litzenberg has said, to have such fine reports as we have had made here today and simply in a perfunctory way put them on file and not express ourselves in relation to the recommendations.

DR. W. F. BRAASCH: I think that the plan as suggested by Dr. Litzenberg is an excellent one. As adopted by the American Medical Association, theirs is a large and unwieldy body and it is very difficult to dispose of business. However, we have comparatively a small amount of business, we have a small assembly here, and therefore I wish

to second Dr. Head's recommendation that we act as a committee of the whole.

DR. J. C. LITZENBERG: Did you mean to consider all recommendations of all the committees?

DR. GEO. D. HEAD: Where recommendations have been made. In some of the reports there were no specific recommendations.

(Motion duly carried.)

THE CHAIRMAN: The Statewide Publicity Committee by Dr. Pearce.

REPORT OF THE STATEWIDE PUBLICITY COMMITTEE

This Committee has been comparatively inactive during the past year.

"The Northwestern Health Journal," which was fostered by the Minnesota Public Health Association and this Committee, is prospering and has an ever-increasing list of lay subscribers. The material in the Journal is very high class and is designed to reach the ordinary reading public.

"The Popular Health" is a new magazine now being published by the former editor of the Northwestern Health Journal, and is very much the same type of journal. It is at present in no way sponsored by any medical society or medical group, but the material is being submitted by the editor to various medical men, who are members of this society, and is uniformly good. The editor is anxious to have a committee from the State Association officially censor the material and the advertising in the magazine. This magazine is rapidly reaching a wide circulation, the editor informs now something over 15,000. It has been sponsored by the dentists of the state to the extent that they are all subscribers, and the dental material is being carefully censored by a group of dentists.

Among other publicity activities of the Committee was the radio broadcasting program. After consultation with the president, Dr. MacLaren, and the counselors, an agreement was entered into with the Dayton Company for the broadcasting of a program of popular medical topics. The program was prepared and the topics were to be given out as under the auspices of the State Medical Society, naming also the County Medical Society of which the man who prepared the talk was a member. In our agreement with the Dayton Company, there were to be no names mentioned, the talk simply being sponsored by the State and County Societies. Owing to suspension of operation by the Dayton Company and the WLAG broadcasting station, the program was not carried out. The Committee would like to know, at this time, the sentiment of the Society on the propriety, the feasibility and value of such a broadcasting program. While no advances have been made, it is possible that the new, large broadcasting station, now in the process of construction by the Washburn-Crosby Company, could be induced to give us a place on their program. If the program had been carried out, as intended, the outlines for the various talks would have been submitted to the members of this Society throughout the state, they being asked to write a popular article on the subject which would either be broadcast from the station by the author or a substitute when the author could not be present. The author's name would not be mentioned, but the article would be published in the state medical journals giving credit to the man who prepared the article.

The Committee was also interested with the Public Health Committee of this Society in promoting interest in the State Fair Health exhibitions. We believe by the showing of a little interest that the whole health program of the State Fair could be put under the auspices of the State Medical Society and the University Medical School, and that it would be a very fine form of publicity and public health work for the Society.

As the publicity work of the Society must largely be carried on under the guise of public health, there is an overlapping duplication in the existence of two committees such

as we now have, the Public Health Committee and the Statewide Publicity Committee. Therefore, it is the desire of the Statewide Publicity Committee that this Committee be discontinued as a separate committee and be continued as part of the Public Health Committee.

N. O. PEARCE, M.D.,
Chairman Statewide Publicity Committee.

DR. N. O. PEARCE: Since this report was written, the Washburn-Crosby station, this new station, has approached the Hennepin County Medical Society and the Ramsey County Medical Society with a proposition to have them take over the control of all public health and medical broadcasting from the station. They have offered to place the entire matter in the hands of the committee appointed by those organizations, at the same time requesting that the state organization either endorse or enter into the agreement. They have agreed to give us as much time as we desire, specifically stating at this time fifteen minutes between eight and eight-thirty on each Wednesday evening. I also wish to say that "Hygeia" or the health magazine of the American Medical Association have now a radio broadcasting department and they are prepared to furnish a great deal of the material that would be broadcast as medical subjects. The Hennepin County Society, or their board of trustees, have appointed a committee, and the intent is now pretty much to use the broadcasting material furnished by the American Medical Association, and to have timely talks by men who are in full time public health work, in addition. I think it would be a very important thing for the House of Delegates to consider this question of radio broadcasting and to enter into a committee co-operation with the Hennepin County and Ramsey County societies who are prepared to go ahead with this program.

(Moved, seconded and carried that the report be adopted.)

THE CHAIRMAN: Dr. Ritchie is here and will report on the Annual Congress of Medical Education, please.

REPORT OF THE REPRESENTATIVE TO THE ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Fortunately for the delegate to the Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals, the press of the American Medical Association is now incorporating the proceedings in pamphlet form, which this year includes 102 pages of closely printed material.

Formerly, the delegate attempted to scan the proceedings in a report, an attempt which you can appreciate would be of little value. Those of you interested in medical education, will find most interesting discussions upon policies in undergraduate teaching, in postgraduate teaching, in medical extension work, all incorporated in this extensive report. Similarly, those interested in the problems of regulation of practice by law, the relation of the profession to the various sects and cults in healing, will also obtain much information. Those of you particularly interested in hospital service will find much upon the measures which indicate efficiency in hospital administration, the wonderful information and plans for increasing the autopsy percentage and also its effect upon the demand and supply of interns. Those of you interested in public health will find various plans for periodic health examinations, organization of county medical societies for the dissemination of information for the benefit of the public.

In every former report, your delegate has been most enthusiastic concerning the high plane of the papers as well as the splendid personnel of the meeting, including, as it

does, presidents of universities, deans of medical schools, head masters in various departments of the teaching profession. This meeting is open to anyone, and everyone is always made most welcome. It meets every year at the same place, the Congress Hotel, Chicago, and usually at the same time, early in March.

Respectfully submitted,

HARRY P. RITCHIE.

(On motion duly seconded and carried the report was accepted.)

THE CHAIRMAN: Any new business?

DR. F. S. WARREN: Before we adjourn this meeting I would like to say a few words on the Harrison Act and that recommendation to put the tax back to one dollar as it was before the war. It seems strange to me that the doctor should be called upon to pay any fee at all, and I would recommend that we ask that the fee be entirely abolished. I note that in the American Medical Journal, for January 24 I think it was, of this year, it was stated that it was probably necessary to put a one dollar tax with this law so that it would be perfectly legal. Well, now, why the profession should carry that law when it is a law calling for the reform of the whole country, I cannot understand. If the people want that law why doesn't the payment for its enforcement come from the general treasury? I understand that in 1922 \$613,000 in excess of that necessary for enforcing that law was collected, and that was paid to the general treasury of the United States. If so, we are being taxed excessively. I would recommend that that tax be entirely wiped out, and let the general treasury of the government carry the payment.

THE CHAIRMAN: If there is nothing further in the way of business we can take up these recommendations.

DR. W. F. BRAASCH: I would like to bring before your attention a matter which has interested me a great deal in the last few months and that is a progressive step which has been taken already by eight state associations, namely the adoption of a full time secretary. Unquestionably this is a movement which is necessary with the changing conditions and the many demands upon the State Medical Association. In the suggestion I do not wish to criticize in the least the present secretary, who has done so well, nor the management of the journal, which is also ably conducted; but there are so many demands for the secretary and so many opportunities for a man who can devote his full time to the work that it seems to me we should seriously consider the adoption of such a provision.

I wrote to Dr. West, secretary of the A. M. A., for information on this subject and he told me that there are already seven states, and possibly eight, that have adopted the full time secretary. It has been their experience—and some of them have had it for two and three years—that it has been of the greatest benefit to the state medical association. He also said that in his opinion any state association with a membership of more than fourteen hundred (and we have almost two thousand) should have a full time secretary in order to be most efficient.

I wrote to several of the secretaries, particularly the Ohio State Medical Association, which association has a full time secretary since three or four years even, and he writes me a letter from which I will quote liberally. (Reads letter.)

And now from the secretary of the State Medical Society

of Wisconsin I have also a letter which points out a number of advantages of a full time secretary. (Reads.)

The executive secretary could work with the laity on matters pertaining to public health and the amalgamation of various organizations that are already functioning, economy of concentration of one man, and he could also remain as the editor of the journal, and he could act in an advisory capacity. As it is now, the chairman of the various sections each year is appointed and discharged, and his experience is lost. A new man who has had no experience is supposed to carry on the work, and under his guidance, which will be continuous all the year, he will have a better opportunity to be of aid.

Now, as I said before, we have an excellent secretary; we can not criticize the work of our present secretary, but it stands to reason that a man who can devote all his time to the work and with established headquarters can accomplish a great deal more. He can also help to round up some five or six hundred physicians, I am informed, who are not members of this association; and he can organize and revive the county medical societies and help them in a thousand and one ways. Therefore I would present this matter first for your consideration.

DR. W. A. JONES: May I ask a question as to the expense of such a man?

DR. W. F. BRAASCH: In regard to the expense of such a move, it would unquestionably mean an increase in the society dues. It will entail an expense of possibly five thousand dollars for the salary of such an executive full time secretary. Several of the states have employed laymen, claiming that a layman will have possibly greater business ability and will be in closer touch with the public, particularly a layman who has had some newspaper experience. However, this is not necessary at all. We already have the journal taken care of and at a very economical rate. I think there are advantages in this state under these peculiar conditions in having a physician rather than a layman. I believe, however, that we could not hope to have any physician of ability to officiate for certainly less than five thousand dollars.

As to the method of meeting this large increase, we are now paying five dollars; of those dues two dollars are being devoted to legal defense. It is a matter which unquestionably should be brought up for consideration also before this body, and it already has been brought up for consideration: whether or not we are justified in continuing this legal bureau and whether we are getting value for the money expended. It seems to me that it does not officiate at all as it should. We are paying two dollars for something that we do not get except in a limited way. We really have no legal defense at all as far as that goes, except that we have attorneys, but there is no compensation offered. Furthermore, there are a number of arguments which could be brought up to obviate that. Take these two dollars and apply them toward the secretary's salary. It would mean an increase of a comparatively small amount in the present dues, possibly two dollars more, so as to make the present dues seven dollars. I am sure it has been the experience of the men that I have talked to in other state societies and of the secretaries that the members of the society more than feel repaid for the extra expense by the increased work that

the state society does and by the great increase of influence it has upon the laymen.

DR. J. G. CROSS: If Dr. Braasch makes that as a motion, I suppose the committee as a whole ought to vote on it.

DR. W. F. BRAASCH: We have a contingency which arises now which should be met, namely, you have heard that our worthy secretary has offered his resignation, and I think it has been accepted. He is, however, willing to continue until January 1st in his present position, so we have until January first if the society wishes, to consider and to adopt, at least tentatively, such a program.

DR. J. G. CROSS: Would you think that this was a matter to be referred to the Council?

DR. H. M. WORKMAN: In explanation I will say that this matter came before the Council and the president of the Council appointed a committee to consider or to see for what they could secure a full time secretary. I am not in a position to say what we would have to pay, but there was a committee appointed by the Council, if the House of Delegates should approve the securing of a full time secretary, to see what one could be secured for and to have him begin work then after the expiration of Dr. Drake's time. That would do away with electing a secretary, if the House of Delegates will approve the recommendation of Dr. Braasch. In order to get it before the house, I would like to move that Dr. Braasch's recommendation be adopted.

(Motion seconded.)

DR. H. L. TAYLOR: I would like to ask Dr. Braasch what the dues are that are paid by the Wisconsin State Medical Society. I asked about that during recess at noon and I understand that they are paying fourteen dollars.

DR. W. F. BRAASCH: I am quite certain that you are wrong. The dues in the Ohio State Medical Society are nine dollars, and the dues in the Wisconsin Medical Society are eight dollars, as I was informed.

DR. H. L. TAYLOR: I was very credibly informed that they are fourteen at the present time, and that the Ohio State Medical Society has a very much larger membership. As far as organizing the state organization is concerned, we are thoroughly well organized, with over nineteen hundred members and six hundred practitioners that are not members. I would like to know how many of those six hundred we would be willing to receive even if our full time secretary rounded them up.

DR. W. F. BRAASCH: I am quite certain that you are mistaken as to the fourteen dollars, Dr. Taylor. I am sure that the dues will not be more than eight or nine dollars at the most, and I believe that with this cancellation of the clause for legal defense they can be reduced to seven dollars surely. As you say, unquestionably the journal is well taken care of by Mr. Bruce; and in talking this over with the Council and others, we felt that we ought to continue Mr. Bruce in his present capacity. That will of course reduce the work of the secretary, but will give him a greater opportunity for lay work and for coordinating these various organizations that are now uncoordinated and that are overlapping. I think you will have to leave it to the judgment of the committee from the Council, if you adopt this motion, to see that the dues will not be exorbitant, that they will not be more than nine dollars.

DR. W. A. COVENTRY: Might there not be a difference

of understanding on that? Eight dollars state dues, but fourteen dollars county dues of which eight dollars is for the state.

DR. C. B. WRIGHT: Wouldn't it be advisable to settle this first in the local societies? A few of us who are interested in the local societies find that at present the dues are getting a little strong. I think it might be advisable to have this matter presented for endorsement by some of the local societies before it is carried out. I rather think that at the present time many of the local societies wonder what they are paying all this money for. I have heard that criticism many times, and I believe that some method ought to be used to sell this thing in an enthusiastic way to the members of the local organizations. That is my experience. Personally I have heard that criticism, and if you are going to raise the dues without first getting the endorsement at least to some extent of the local societies who make up this organization, I think we may find a difficulty in putting it over.

DR. L. SOGGE: I fully agree with this last speaker. I for one will not be willing to vote before I know what it is going to cost. A good many of us did that a few years ago and we have suffered a whole lot for it. So I would like to know what the dues would be if we had a full time secretary before I would want to vote on it, and I think it would be pretty hard to vote until I had referred it back to my own society. I think that we ought to have a vote from the local society first and know how much the dues are going to be and then vote on it in the society, because if we raise the dues very much I am afraid we are going to lose some of the members down in our section of the country. I am not sure now of the percentage but I believe that about seventy-five per cent of the men down there are carrying individual liability and still they are paying those dues into the society every year, and they are getting tired of it. They have absolutely no benefit from that liability, because I know there have been quite a few suits down in there brought for malpractice but they all used their individual Fort Wayne insurance that practically all of them carry. I think it would be a good thing if we take away that liability insurance, and if it would not raise the dues very much I think the full time secretary is a mighty good thing, but we do not want the dues too high.

DR. H. M. WORKMAN: I want to just say one word in explanation for the Council. I do not think it is the idea of the Council to ask any increase in the dues at this time. What the Council appointed the committee for was to see what they could secure a full time secretary for under our present assessment, not to increase the dues until we come back to you with what it can be done for with the present assessment. This two dollars for insurance will have to be enforced for six years, even if we repeal it now, until the expiration of the liability occurs. Any man who is now a member of this society, even if we stop the insurance at this time, would have to be defended for the next six years, and we would have to keep up this two dollars for six years anyway.

If we can get a full time secretary and continue the dues what they are now, why we will be that much better off; and that was the idea of the committee that the Council appointed to investigate this matter and see if we could

not find somebody to do that for the time being until we got this thing going.

THE SECRETARY: Inasmuch as I have been the secretary for four years and am retiring, I just want to say a few things in regard to this proposition. I was one of the committee appointed with Dr. Braasch and Dr. Workman to present this thing to the House of Delegates for the Council. There isn't any question in my mind but what it would be much better for the association and its affairs in every way to have a full time layman to handle the business side of the association. Other associations have had great difficulty in getting just the right type of man to do that, a man who will go out and help county societies organize and help increase the membership of the association. It is doubtful in my mind whether we could get a man who was worth while to do that for less than five thousand dollars. That means five thousand dollars more than the hundred dollars a month that we are paying now. We are paying one hundred dollars a month, which is a ridiculously low sum for organization purposes, that is, for somebody to handle and keep track of the membership and all the details. That is just twelve hundred dollars a year.

Now if you had a high salaried man, that is, a man with a four or five thousand dollar salary, he isn't going to work the typewriter; he isn't going to keep all these records. He will have a stenographer, and you can't get a stenographer nowadays for less than a hundred dollars a month who is worth anything. Another item is rent; and you can't get an office for less than forty or fifty dollars a month. You will incur a rather big expense.

There isn't any question in my mind but what this is a fine thing, but I really think that a committee ought to be appointed to go into the financial side of it and consider it thoroughly before any action is taken. I would be in favor of it, and I would be willing to pay nine dollars, which is the figure that I got from Wisconsin a year ago at Chicago at the secretaries' meeting when I spoke to the executive secretary of the Wisconsin Medical Association. He said that the dues had been raised from four to nine dollars. He also said that the advertising in the state journal was so much more since he had become executive secretary that such a marked increase in the dues would not have been necessary. In putting this proposition into effect in Minnesota we are not considering putting this manager in charge of the journal too, so that this is no argument for adopting such a measure.

I really think that the solution of this problem is to find out exactly how much money it is going to cost. The state association was only five hundred dollars ahead of the game this year, which is pretty close sailing. To attempt what looks to me like a seven or eight thousand dollar proposition ought to be looked into pretty carefully before it is adopted, because I am afraid the members of the state association may not think that they are getting their money's worth if we raise the dues to nine dollars.

DR. W. F. BRAASCH: This is from the secretary of the State Medical Association in Wisconsin. I should have read it before. (Reads letter.)

And may I also say that it was my original intention to bring this merely for your consideration, but in view of the fact that the first of January we will have no secretary and will have to hunt around to get one temporarily at least,

it appeared to the Council that this might be an opportunity to try out this method.

DR. C. P. WRIGHT: I do not want to be misunderstood on this proposition. I am absolutely in favor of it. I think it would be a wonderful thing for the entire medical profession in Minnesota, but I still believe that it would be better to approach the matter in a way so that everyone will understand exactly what that is for and the local organizations be entirely in sympathy with it. I believe you can work up such a sentiment, and I think it would be a tremendously valuable thing if you can do it. Now I would like to make a motion that this recommendation be referred to the local societies which are component parts of this organization for their endorsement.

(Motion seconded.)

THE CHAIRMAN: There is a motion before the house, I think, now.

DR. W. A. COVENTRY: May we have the motion, please?

THE CHAIRMAN: Dr. Braasch, will you make your motion again?

(The Secretary read Dr. Workman's motion as follows: I would like to move that Dr. Braasch's recommendation be adopted.)

DR. W. F. BRAASCH: Let me repeat the body of my recommendation in a few words: That the committee appointed by the Council be allowed to continue in the investigation as to the ways and means of financing a full time secretary, and if in their judgment it is feasible that he be appointed to take the place of the retiring secretary without an increase in dues.

THE CHAIRMAN: Without an increase in dues. Is that all understood? Are you ready for the question?

(The motion having been declared carried in the usual manner, there was call for a rising vote, which being taken, showed twenty-four in favor and twelve opposed.)

DR. C. B. WRIGHT: I move that this motion be referred to the local societies for their endorsement. The reason I say that is because I think it is a good thing to get the local societies in on this. I have had a little experience with one society, and you want your society back of you. I believe there are a good many men here who will agree that if you can get co-operation from your local society you will get much further. Therefore I make that motion.

(Motion seconded and carried.)

THE CHAIRMAN: Now the recommendations that we have here in these papers will be taken as the Secretary comes to them.

DR. J. G. CROSS: I beg your pardon, are we now a Committee of the Whole?

THE CHAIRMAN: Yes.

THE SECRETARY: The matter of the physicians who have become incapacitated or are in straitened circumstances. It was the consensus of opinion in the Council that this matter should be taken up before the House of Delegates. I might state in connection with this that I received a communication from Dr. A. W. Ide, of St. Paul, written when Dr. Beebe was a patient at the Northern Pacific Hospital in St. Paul. He stated that the situation was really brought to his attention by the case of Dr. Beebe. Dr. Beebe was in need of financial help, and the thought occurred to Dr. Ide that it would be a fine thing if the Minnesota State Medical Association could start a fund to provide for mem-

bers of the association who are in straitened circumstances, due to sickness or accident or old age. A letter was written by Dr. Ide to Dr. MacLaren, and Dr. MacLaren being ill was unable to act upon the situation, so the copy of the letter was sent to me, and I thought it only proper to bring it before the delegates. Reference was made to an article which appeared in "Clinical Medicine" on a proposition which had just been undertaken in New York State where a country place was presented to the society which was gotten up by the doctors of the state to provide for such unfortunate members of the profession. The idea of this New York society was to have it of rather national scope, the New York society being the first unit to be established. I am simply bringing it to your attention. I don't know whether it has ever been brought to the attention of the state medical association before. I am not going to put it in the form of a motion, but if anybody believes that this is worth while or advisable it seems to me a motion would be in order to perhaps refer it to a reference committee.

DR. GEO. D. HEAD: Would a motion be in order to refer this matter to the Council with power to act or set aside a certain sum for this purpose out of the money available?

THE CHAIRMAN: I think so. I think that if the House of Delegates so ruled the Council would have authority to act.

DR. GEO. D. HEAD: I would make such a motion, that we refer to the Council with power to act the matter of setting aside a specific sum of money to assist members of the association that are in real need.

(Motion duly seconded and carried.)

DR. J. G. CROSS: Before we are too far along in this, may I ask the Chair to rule whether in committee of the whole it is proper to provide for the sending of a message of regret to our President? That, it seems to me, ought to go forward without any delay. I would move you that the Secretary be instructed to send a message by wire to the President, Dr. MacLaren, suitably expressing our regret that his illness prevents his being among us.

(Motion seconded and carried.)

THE SECRETARY: These are the recommendations from the report of the Committee on Public Health: (1) That local committees on legislation be continued in every county society in the state.

(Motion to adopt recommendation seconded and carried.)

THE SECRETARY: (2) That local committees on public health in every county society take an active interest in all local public health matters.

DR. C. L. SCOFIELD (Benson): I believe that in most county societies there are no such committees and that it would be advisable to change that to provide for such public health committees in county societies and then add this recommendation do it. If I am correct in that statement, I would move that county societies be requested to appoint public health committees and that these recommendations be followed.

(Motion seconded and carried.)

THE SECRETARY: (3) That radio broadcasting on public health matters be undertaken as soon as possible under the auspices of the statewide publicity committee, that such talks be announced as being given under the auspices of the Minnesota State Medical Association and the County medical society, but that the name of the speaker shall not

be announced if he is engaged in the active practice of medicine.

I might say that in the report of the publicity committee they have recommended that their committee be terminated. We ought to take that into consideration in acting on this.

DR. FRANK SAVAGE (St. Paul): May I have the privilege of the floor? I am not a member of the House of Delegates. This matter has been a regular storm center of discussion. It has been threshed out in Hennepin County; it has been threshed out in Ramsey County. The general consensus of opinion is that it would create bad feeling if a certain few were selected and their names were announced. The viewpoint of the radio corporations up to this time, especially WLAG, has been that these talks are of no value unless the names are announced. Dr. Wright's viewpoint on that was to let them come to the viewpoint of the medical men or not get the material. They have been very anxious to get the material. Now as Dr. Pearce has stated today, they are ready to accept this proposition, and it is the idea to establish these radio talks to be given under the auspices of the State Medical Association sponsored by some county medical society, and make the radio companies either take that or we will not give the talks to them, and establish that principle in order to create good feeling and not bad feeling. It doesn't make any difference under whose auspices this is undertaken, but I would like to see that principle established: that the name of the speaker be not announced if he is engaged in the active practice of medicine. I think that is a very important thing, and those who have given it time and thought I think are unanimous in that conclusion.

DR. C. B. WRIGHT (Minneapolis): In Hennepin County we had this matter before us the last two or three years. How it came up first was through the request of a number of men who are on the fringe of the medical question who asked us to allow them to talk over the radio. The thing was threshed out very thoroughly. The chairman of the publicity committee took this question up, and this was the only solution of it which we decided would be without discussion and would create no feeling. For instance, as Dr. Fishbein said in his talk in Minneapolis, he gave a talk himself, a full time man in the employ of the American Medical Association, and the next morning he had twenty-five or thirty calls over the telephone and letters asking him for a consultation in his office. The whole thing is new, and it seems better to approach it from a perfectly safe standpoint. As there are probably fifty men in full time work in this state, through the University and other places, it seemed to us that this would be the advisable thing to do.

Now as you know Washburn-Crosby have taken over WLAG, and through the help of public spirited citizens of Minneapolis and St. Paul, who have contributed a large amount of money, they are putting in a very expensive radio which, when completed, will broadcast all around the world. We had a consultation with them, Mr. Wilbur and Major Harrison, who are directing this thing, and they are very anxious to co-operate with us. They are anxious to put on something which will be of real service to the Northwest in the way of market reports and various other things which will be of value. They are not so particular about whether it is going to be the thing which goes over quick;

they want to develop something which is of educational value. They are very willing, I think, that we use the clippings of "Hygeia" which are sent every month, reinforced by talks by various public health men on subjects of live interest. They are very anxious to co-operate, and I think it would be a great mistake to step backward, because we have got to the point where we must advance.

(Motion to adopt the third recommendation of the Public Health Committee seconded and carried.)

THE SECRETARY: (4) That the Minnesota Public Health Association be asked to broaden the scope of their work to include the sending of selected articles on public health to the newspapers of the state at regular intervals and to obtain the newspapers' co-operation for their publication. (Recommendation adopted.)

THE SECRETARY: (5) That the association endorse the Northwestern Health Journal and permit the management to state that it is the official journal for the public of the Minnesota State Medical Association.

DR. GEO. D. HEAD (Minneapolis): I would like to raise the question as to whether or not it would be wise to state that it is the official journal for our association. Unless we have fairly definite control, I doubt that we ought to allow our name to be published as being represented by this journal or endorsing the journal and having our name put in the journal as its representing us officially. Wouldn't it be just a little bit dangerous perhaps unless we had some way of passing upon or editing the material that goes in? I know the Northwestern Health Journal is a splendid magazine and we all endorse it, but isn't that sufficient without putting our name upon it? I just raise the question.

(Dr. H. M. Workman moved that the association endorse the Northwestern Health Journal but that the second part of the recommendation be omitted. After considerable discussion the motion was carried.)

THE SECRETARY: (6) That the Secretary of the Minnesota State Medical Association transmit to the Board of Regents of the University of Minnesota, the recommendation of their House of Delegates that in addition to educational requirements to the medical school that the character of applicants for admission be ascertained by confidential reports and that those not measuring up to a proper standard be rejected.

DR. GEO. D. HEAD (Minneapolis): I would like to ask whether or not this matter has been submitted to the dean of the medical school and the dean of the post-graduate school before the recommendation was made.

DR. J. C. LITZENBERG (Minneapolis): I do not know. I haven't heard of it.

DR. GEO. D. HEAD (Minneapolis): Wouldn't it be wise, since this is rather drastic for applicants to the medical school, first to have some advice from the authorities before acting on it, or make it with the approval of the dean? I would amend the recommendation by inserting the words: "With the approval of the dean of the medical school."

(Recommendation adopted as amended.)

THE SECRETARY: That the State Medical Association continue its part in the State Fair Public Health exhibit.

(Recommendation adopted.)

THE SECRETARY: I would like to bring before the house

the question of whether or not the Statewide Publicity Committee is to be discontinued as they wish.

DR. N. O. PEARCE (Minneapolis): As chairman of that Statewide Publicity Committee, my reason for recommending that this committee be discontinued and merged with the Public Health Committee is that there is no distinct line of demarcation between the two groups. Everything that I reported was already touched on in the report of the Public Health Committee. I believe that it is unnecessary and makes a cumbersome machine to do the work if you have too many machines that are working on too closely related subjects. To me it seems there are two distinct things that the Public Health Committee should have to do. One of them is to keep in contact with all public health organizations doing public health work throughout the state, keep in medical touch with those organizations and do what is possible to keep them all up in the proper spirit of activity. The other is the medical propaganda in order to get an intelligent public medical viewpoint. That I consider is the work of the Statewide Publicity Committee, trying to create an intelligent medical viewpoint on the part of the public. At the same time, the work is so closely associated that it would be much better taken up if one committee had charge of this program of public health activity and if that was just a department of the public health committee. Therefore we recommended that the Statewide Publicity Committee as a separate committee be discontinued and be provided for in the appointment of the new Public Health Committee.

(On motion, the Committee of the Whole dissolved and again became the House of Delegates.)

DR. J. C. LITZENBERG (Minneapolis): I move that we listen to the report of the Committee of the Whole. Nothing that was adopted in the committee is of any force until it is adopted by the house. The Secretary can report for the Committee of the Whole.

THE SECRETARY: Gentlemen, certain recommendations have been made by the Committee of the Whole; you all know them. You notice that I am called upon to make the report. I make the motion that the suggestions which have been taken down by the stenographer and which you all know be adopted by the House of Delegates.

(Motion seconded and carried.)

A MEMBER: May I have the privilege of the floor? Dr. Workman suggested that if we discontinue our defense of malpractice we would have to continue defense of those who are in for at least six years. I would like to make a motion that the members of the committee use their best efforts in the state of Minnesota to have some specific legislation passed to limit it to two years as they have in our neighboring state of Iowa and other states that I know of.

(Motion seconded and carried.)

THE CHAIRMAN: What is your further pleasure?

DR. GEO. D. HEAD (Minneapolis): I move that when we adjourn that the House of Delegates adjourn to meet at one o'clock tomorrow.

DR. W. A. COVENTRY (Duluth): Last year we had this same sort of wrangling that we have had this afternoon, all in a friendly spirit, however. It seems to me that the business of this House of Delegates is not handled the way it is in most organizations that I have been mixed up in.

I would like to offer this amendment to the by-laws to be acted on tomorrow: That there be appointed by the president on the first day of the session of the House of Delegates a committee on resolutions consisting of five members to whom shall be referred all recommendations submitted to that session, reporting their findings for action at the last day of the session.

DR. H. M. WORKMAN (Tracy): I will make that the second day of the session.

DR. W. A. COVENTRY (Duluth): I will accept that amendment.

(Amendment seconded.)

THE SECRETARY: I think that is going to mean that the House of Delegates will have to go into a committee of the whole on the second day if that resolution is made. Now all these recommendations have already been thought over for a year before they are proposed to the House of Delegates. Why have another committee to pass on all of this when the House of Delegates is here to discuss these things? It would be well to hold the recommendations over until the next day, but I believe as Dr. Head does that this House of Delegates ought to go into a committee of the whole and discuss these things just the way we have done this afternoon. I am afraid that if we just refer all these recommendations to five men there will be very little chance for any open discussion, which I think is the function of this House of Delegates. If we go into a committee of the whole on the second day—which of course would obviate that—it would mean a long drawn out session on the second day, and I think that ought to be considered.

DR. W. A. COVENTRY (Duluth): My idea was to avoid all this terrible confusion. We do not know what we are talking about half the time. If the committee has this definite recommendation before it drawn up in some sort of form to present to this House of Delegates, you can have it in the committee of the whole if you wish, but you have something definite to work upon. As it is now, it is a question of confusing the stenographer and going back over a lot of pages and not knowing what we are trying to find. It is a question of whether it is better for the committee to work through the year and report to the house or better to report to a special committee and let the committee get things in hand before presenting them to the committee of the whole. I am trying to find some way of getting out of this terrible confusion.

DR. H. M. WORKMAN (Tracy): Well, I second Dr. Coventry's motion. The idea is this: We come here as delegates on the first day with nothing to do, and on the second day we will be denied the privilege of attending any sessions and we will take just as much time the second day as we have taken this afternoon. The members of the Council and the House of Delegates are here to attend the meetings, too, and they are going to be denied that privilege.

DR. W. A. COVENTRY (Duluth): In order to facilitate business a little bit, may I ask Dr. Workman if he would have any objection to having it so that recommendations can be referred to this committee beforehand.

DR. H. M. WORKMAN (Tracy): I don't care when they come in; I just want them so we can discuss them.

A MEMBER: I don't see how a committee of five can display any more intelligence after a consideration of a few

hours than the author of the report did after a year's consideration.

DR. B. W. KELLY (Aitkin): Some recommendations made by one committee may be made in a form somewhat different by another committee. In other organizations any resolution to be put before the house must be submitted to the resolutions committee. If we had such a method we would then do away with the greater part of the confusion we have had this afternoon, and the resolutions committee could have had the report on the first day, could have every resolution in concrete, proper grammatical form and proper construction, ready for consideration, and it could be considered by the committee of the whole as has been done today, but without so much confusion. I believe Dr. Coventry would be willing to amend his own motion to that effect, that all resolutions coming before the House of Delegates should come through the committee on resolutions, the report to be submitted on the first day.

A MEMBER: There is just one little bit of differentiation. There have been practically no resolutions brought in; they have been practically all recommendations. I question whether these recommendations should be referred off to some committee of five men to decide upon after these standing committees have been working on them for an entire year. It is not as though they were bringing in resolutions. These are recommendations for the House of Delegates.

DR. B. W. KELLY: I accept that criticism, Mr. Chairman, and still hold to the idea that a recommendation to be made before this house for adoption should come in the form of a resolution. If these all pass through a standing committee on resolutions which would be in session at the opening of this house and immediately preceding, they could be considering these various matters and report when the preliminary business of the House of Delegates had been concluded. That is to say, by the time the reports of the various committees had been heard, these recommendations could be put in the form of resolutions together with other resolutions that any individual member might wish to submit to the house and would be ready for prompt action then, adoption or rejection by the house.

DR. W. A. COVENTRY (Duluth): There is no question. This is an amendment to the by-laws and it has to lay on the table until the meeting tomorrow. This is just offered for your recommendation and action tomorrow.

THE CHAIRMAN: Any further business?

DR. C. L. SCOFIELD (Benson): Now being in order and in view of what has gone before, I would renew my motion that the Council be instructed to reorganize our list of committees.

(Motion duly seconded and carried.)

On motion the meeting of the House of Delegates adjourned until one o'clock the following day.

SECOND MEETING OF THE HOUSE OF DELEGATES THURSDAY, OCTOBER 9th

The House of Delegates met pursuant to adjournment at 1:00 P. M., and was called to order by the first vice-president, Dr. E. T. Sanderson.

The secretary was instructed to read a summary of the minutes of the previous meeting, which were accepted as read.

The President called for a supplementary report of the Credentials Committee and Dr. Braasch reported the following as in attendance in addition to those present at the Wednesday afternoon session:

Hennepin County—Dr. L. A. Nippert, Minneapolis.

Nicollet-LeSueur County—Dr. S. Ericson, LeSueur.

Ramsey County—Dr. E. M. Jones, St. Paul (alternate for Dr. Geo. Geist).

Upper Mississippi—Dr. J. A. Thabes, Brainerd.

Washington County—Dr. W. R. Humphrey, Stillwater.

Winona County—Dr. I. W. Steiner, Winona.

The next order of business was the election of officers and nominations for president were called for.

Dr. W. A. Jones nominated for president Dr. A. S. Hamilton, of Minneapolis.

DR. G. S. WATTAM: Mr. President, I nominate Dr. W. J. Burnap, of Fergus Falls, for president. The presidency of our Association should be given to a member of this body who is a resident of St. Paul, one year; the next year from Minneapolis, and the third year to a member in the outside districts. We have at this time the right to ask that northwestern Minnesota west of St. Cloud be represented. We have never had a president of this Association. We believe that northwestern Minnesota is entitled to that consideration. Dr. Burnap has been one of the staunchest members of this Association for many years. He is at present Councilor for the First District of this Association. I do not believe that this rules him out of being placed in nomination. I know that he will fill the office of president of this Association well, if he is elected.

As there were no further nominations, the names of Dr. Hamilton and Dr. Burnap were balloted upon, Dr. Burnap receiving thirty-two votes and Dr. Hamilton, eleven.

It was moved that the election be declared unanimous for Dr. Burnap. The motion was seconded and carried.

The following officers were nominated and declared duly elected:

First Vice President—Dr. A. S. Hamilton, Minneapolis.

Second Vice President—Dr. John Libert, St. Cloud.

Third Vice President—Dr. C. W. More, Eveleth.

Secretary—Dr. Carl B. Drake, St. Paul (re-elected).

Treasurer—Dr. F. L. Beckley, St. Paul (re-elected).

Councilor for the First District—Dr. G. S. Wattam, Warren.

Councilor for the Fourth District—Dr. W. H. Condit, Minneapolis.

Councilor for the Seventh District—Dr. F. A. Dodge, LeSueur.

The appointment of Dr. H. Longstreet Taylor, St. Paul, to succeed Dr. W. A. Dennis as Councilor of the Third District, following the death of Dr. Dennis in November, 1923, was approved by motion, which was seconded and carried.

THE SECRETARY: I would like to state that my resignation as secretary of this Association had been accepted prior to this meeting and that if I consent to being re-elected that it be with the understanding that a full-time secretary be appointed to take over this work. I will again tender my resignation at that time.

THE PRESIDENT: We will now take up the election of delegates to the American Medical Association. This year we are entitled to a third delegate to the American Medical Association upon the basis of one delegate to each 950 members. Our constitution provides that the election of these

delegates conform to the laws of the American Medical Association.

Dr. J. L. Rothrock was nominated and declared duly elected as Delegate to the American Medical Association.

The names of Dr. J. F. Corbett, Minneapolis, Dr. T. L. Chapman, Duluth, and Dr. J. G. Cross, Minneapolis, were proposed for election as the third Delegate to the American Medical Association. As the first ballot gave no majority vote, a second ballot was cast, resulting in the election of Dr. Chapman.

Dr. J. G. Cross, Minneapolis, as alternate for Dr. Rothrock, and Dr. Theo. Bratrud, Warren, as alternate for Dr. Chapman, were nominated and declared unanimously elected.

DR. H. M. WORKMAN: Mr. President, I would like to propose an amendment to the constitution. Whenever the chairmen of the various committees come in here to make their reports they have to ask the privilege of the floor in order to address the House. I would therefore add to Article V—"also the chairmen of the various appointed committees and the delegates to the American Medical Association, but without vote."

DR. W. A. JONES: I move that the amendment be referred.

Seconded and carried.

DR. W. H. CONDIT: Mr. Chairman, may I present the matter of the next meeting at this time? I would like to invite the Association to meet in Minneapolis next year.

DR. C. L. SCOFIELD: It has been suggested that if possible these meetings be held on the University campus and I would like to move therefore that the next meeting be held on the University campus if arrangements can be made to do so.

DR. W. A. JONES: There are a few difficulties to contend with in meeting on the University campus. The Hennepin County Medical Society has in view something for next year, in which they hope the State Association will join. There is no auditorium on the campus large enough and no auditorium available after September. We have been forced to go outside for an auditorium. This is a very serious objection.

Motion was made, seconded and carried to accept Dr. Condit's invitation to meet in Minneapolis next year.

THE SECRETARY: It will be up to the Council to decide on the time when this meeting is to be held. I have heard that there may be a meeting of the Tri-State Association in Minneapolis in October of next year.

DR. W. A. JONES: It has not been determined definitely.

THE PRESIDENT: We will now have the report of the Reference Committee. Dr. Braasch.

DR. BRAASCH: Your committee suggests that the House of Delegates recommend to the next Program Committee that more combined meetings be held and that the program consist largely of clinical presentations and papers read in abstract.

(Signed)

W. F. BRAASCH,
W. A. JONES,
GEORGE D. HEAD.

A MEMBER: I move that the report of the committee be adopted.

DR. B. S. ADAMS: The papers that we get at the state

medical meetings are helpful and interesting. Would this recommendation mean any curtailing in the character or in the number and quality of the papers we are going to have?

DR. W. F. BRAASCH: Of course, the idea is that in keeping with the present policy—to hold as many clinical presentations as possible and to avoid the long tedious paper which is devoid, more or less, of interest. This plan gives an opportunity for many more clinical presentations than by the former method. I think there would be plenty of opportunity for what you refer to.

DR. B. S. ADAMS: I think it would be too bad if we do not have some good papers for our journal.

DR. W. F. BRAASCH: There would be plenty of material for the journal.

The motion that the report of the committee be accepted was seconded and carried.

DR. J. W. BELL: Mr. President, in the matter of employing a full-time secretary, I would like to inquire whether the idea of the assembly was to have a medical man. I wasn't quite clear on that point when the matter was brought up before.

DR. W. F. BRAASCH: It is the intention of that committee to have a physician as secretary.

THE SECRETARY: I wish to ask the opinion of the House on the advisability of having a full-time secretary. Was it the wish of the House that the motion stand as Dr. Wright gave it?

DR. C. B. WRIGHT: The motion was not in very definite form. It was simply left to the Council to provide ways and means. There is nothing definite to refer to the Society at this time. If a full-time secretary can be procured without increasing the dues there will be no need to refer the matter to the local societies. If the dues are increased, the matter should be referred to the local societies. I therefore move that if it is necessary to increase the dues of the local societies to provide a full time secretary, that this matter be referred to the local societies for their decision before definite action is taken.

A MEMBER: A motion has already been passed that the matter be referred to the local societies. It is a question of whether this should be done by the secretary or the delegates.

DR. H. M. WORKMAN: I second the motion of Dr. Wright.

The motion was carried.

THE PRESIDENT: Is there anything to come before the meeting under Old Business?

THE SECRETARY: The Legislative Committee in their report brought up a communication received from the American Medical Association headquarters asking that this state association confirm some resolution made by the American Medical Association in order to get more pressure to bear on Congress. I have not had time to go through the material. The Legislative Committee did not leave an outline with me. I think it would be safe to take action to carry out this request of Dr. Woodward.

A MEMBER: I move that the State Association confirm the resolutions of the American Medical Association.

DR. J. W. BELL: May we have the suggestions of Dr. Woodward?

THE SECRETARY: Dr. Woodward requests that we take

action on the following propositions which have received the approval of the American Medical Association House of Delegates or the Board of Trustees:

The endorsement of a bill now pending in Congress requiring the labeling of packages containing lye and other caustic substance as poison.

A resolution passed by the American Medical Association House of Delegates expressing its disapproval of the portion of the National Prohibition act which limits the prescribing of liquor by physicians on the ground of this being interference with proper relations between physician and patient.

The reduction of the war tax imposed under the Harrison Narcotic law from \$3.00 to \$1.00.

Fostering legislation placing cosmetic preparations under the Food and Drug act.

The creation of a federal department of Education and Relief comprising a Bureau of Public Health and a Bureau of Relief.

Relief for the medical profession, which will enable a physician to charge up traveling expenses to and from medical meetings to professional expense.

DR. W. A. JONES: I move that the secretary be instructed to cast the vote of the House of Delegates.

DR. WARREN: I would like to see the Minnesota State Medical Association go on record as asking that the narcotic tax imposed on physicians by the Harrison Narcotic Act be entirely wiped out. If the United States wants to institute a reform, let the people pay for it. They put a burden on us that does not belong to us. I ask that that fee be entirely wiped out.

DR. W. A. JONES: I move that the State Association go on record as asking that the tax imposed on physicians by the Harrison Narcotic Act be removed.

DR. J. W. BELL: I do not think that the medical profession should ask a modification of the act to allow us to distribute more whiskey and liquor than we do now. I move that that part of the recommendation be stricken out.

A MEMBER: I second the motion.

THE PRESIDENT: That motion is considered as an amendment to Dr. Jones' motion, I believe.

A MEMBER: The morning after this action was taken over by the national association, the Chicago papers said that the American Medical Association had gone over to booze. I think it is high time to show that we have not done that. I do not see any reason for any more liquor than we have, unless we want to assume the duties of the former bartenders. It would be better to cut down the amount instead of increasing it.

THE PRESIDENT: A motion has been made and seconded that Dr. Jones' motion be accepted with an amendment. Those in favor signify by saying, Aye.

The vote was undecided and a rising vote was asked for.

DR. W. A. JONES: I want to waive that motion.

THE PRESIDENT: It cannot now be waived.

The motion was carried by a rising vote.

DR. WARREN: I wish to make my motion that the fee be entirely wiped out instead of brought down to \$1.00 and that the Association go on record as recommending that.

THE SECRETARY: A fee of \$3.00 is now charged for the privilege of dispensing narcotics. Efforts have been made by the American Medical Association at Washington to

bring it back to \$1.00. It would be better to request a reduction of the fee to \$1.00 on the grounds that it is now a tax on the physicians, whereas \$1.00 is necessary as a fee to handle that particular federal regulation.

DR. WARREN: There is no reason why the government should put a fee on us. It is not the amount. We do not want it at all. My opinion is that the whole thing is unconstitutional. Special taxes on physicians show discrimination. Such a tax should be carried by the whole nation. I should like to go on record as being opposed to this tax.

Motion was made and carried that the Association go on record as being opposed to the Harrison Narcotic Act entailing the payment of a fee by physicians.

A motion was made that the incoming president be empowered to appoint various committees.

Seconded and carried.

The President appointed a committee consisting of Dr. G. S. Wattam and Dr. George Douglas Head to notify the incoming president of his election and to escort him to the chair at the afternoon session.

DR. A. C. BAKER: In regard to the medical defense feature: we have to go over a period of five years before the present cases would be taken care of, do we not? I move that this feature be abolished.

DR. H. M. WORKMAN: That is an amendment and will have to lay over a year. This proposition has come before previous meetings. The House of Delegates has voted to retain the feature. It involves a change in the By-Laws and must be laid over until the next meeting.

As there was no further business to come before the meeting, on motion, duly seconded and carried, the House of Delegates adjourned *sine die*.

MINUTES OF THE SURGICAL SECTION

A. C. Strachauer, M.D., Chairman.

Verne C. Hunt, M.D., Secretary.

THURSDAY MORNING, OCTOBER 9th

The first meeting of the Surgical Section was held in the Sherman Theatre, St. Cloud, and was called to order at 8:45 A. M. by the Chairman, Dr. A. C. Strachauer.

Dr. Orville N. Meland, Warren, presented a paper on "The Treatment of Severe Injuries of the Scalp," which was discussed by Dr. H. P. Ritchie, St. Paul.

Dr. H. Waltman Walters, Rochester, read a paper entitled: "Obstructive Jaundice and Studies in Liver Function," which was discussed by Dr. A. A. Zierold, Minneapolis; Dr. A. C. Strachauer, Minneapolis; and in closing by Dr. Walters.

Dr. John F. Fulton, St. Paul, read a paper on "Foreign Proteins as Therapeutic Agents in the Treatment of Acute Ocular Inflammation." This was discussed by Drs. Paul Berrisford, St. Paul; W. R. Murray, Minneapolis; Carl Larsen, St. Paul; and again by Dr. Fulton.

Dr. Gilbert J. Thomas, Minneapolis, presented an essay entitled: "Prooperative Treatment of the Prostatic," which was discussed by Drs. H. C. Bumpus, Rochester; Edward Bratrud, Warren; W. F. Braasch, Rochester; Theodore Sweetser, Minneapolis; and in conclusion Dr. Thomas presented slides.

Dr. C. B. Lewis called attention to the two luncheons arranged for Friday noon, that of the alumni of the Univer-

sity of Minnesota, and that at the Country Club in honor of the ladies and such of the members as wished to attend. He also announced that the Commercial Club of St. Cloud were offering the services of their stenographer, free, to the members of the convention.

Dr. Carl C. Chatterton, St. Paul, presented a paper on "Acute Osteomyelitis in Children," which was discussed by Dr. M. H. Tibbetts, Duluth, whereupon Dr. Chatterton showed slides.

Dr. P. E. Stangl, St. Cloud, read an essay on "Perforating Gastric Ulcer," which was discussed by Drs. H. C. Cooney, Princeton; W. J. Mayo, Rochester; E. M. Jones, St. Paul; Verne C. Hunt, Rochester; A. M. Ridgway, Anandale; L. Sogge, Windom; W. H. Magic, Duluth; B. F. Van Valkenburg, Long Prairie; and in closing by Dr. Stangl.

Dr. Wm. R. Bagley, Duluth, read a paper on "Consideration of Various Abdominal Symptoms and Findings in Diagnosis," which was discussed by Dr. J. P. Schneider, Minneapolis, and again by Dr. Bagley.

Adjournment at 12:45.

MINUTES OF THE MEDICAL SECTION THURSDAY MORNING, OCTOBER 9th

E. L. Tuohy, M.D., Chairman
Chas. N. Hensel, M.D., Secretary

The Medical Section of the Minnesota State Medical Association's 56th Annual Session was called to order at 8:30 A. M. in the Knights of Columbus hall in St. Cloud by the chairman of the section as follows:

DR. TUOHY: There seems to be some misunderstanding as to the meeting hour today, but there is no misunderstanding as to the statement on this program, and you will do the Chairman a courtesy if you will pass the word along that tomorrow morning we shall begin at half past eight if there is only one man present.

The first paper to be read to this section this morning is one entitled "Differential Diagnosis of Pulmonary Disease" by Dr. M. George Milan, of Warren, Minnesota, and I now take great pleasure in calling upon Dr. Milan to address us.

Dr. Milan's paper was discussed by Dr. George D. Head, Minneapolis; Dr. L. A. Nippert, Minneapolis; Dr. H. Longstreet Taylor, St. Paul; and in closing by the essayist.

Dr. Everett K. Geer presented a paper entitled "Artificial Pneumothorax in Acute Lung Abscess," which was discussed by Dr. W. S. Lemon, Rochester; Dr. George D. Head, Minneapolis; Dr. M. George Milan, Warren; and Dr. Geer closing.

The paper on "Liver Functional Studies in Experimental Jaundice" was presented by Dr. A. M. Snell, of Rochester, and the paper on "Liver Functional Studies in Clinical Jaundice" was presented by Dr. Greene, of Rochester.

The two papers by Dr. Snell and Dr. Greene were discussed by Dr. Henry L. Ulrich, Minneapolis; Dr. Waltman Walters, Rochester; Dr. W. J. Mayo, Rochester; and in closing by the essayists.

Dr. F. W. Schlutz, Minneapolis, presented a paper entitled "Diabetes in Children." There was no discussion.

DR. TUOHY (Chairman): Members of the Section, on this occasion I wish on your behalf, as well as my own, in the presence of the Chairman of the local committee, to

thank the committee for the great care they have taken in preparing for us and giving us these splendid quarters and having at our disposal all the means of comfort that we are enjoying. This is the Knights of Columbus hall. I am a member of that order in Duluth, and I am pleased to note in St. Cloud there is the same spirit of religious and political serenity, because these colors above us are the colors of the Ku Klux Klan and it is to be seen that both orders are occupying the same hall as in Duluth. (Laughter.)

We have two more papers which will be discussed at the end of the second paper. First, "Practical Electrocardiography," by Dr. Harold E. Richardson, St. Paul, and "Electrocardiogram in the management of heart disease," by Dr. E. T. F. Richards, St. Paul.

The papers by Dr. Richardson and Dr. Richards were discussed by Dr. R. Edwin Morris, St. Paul; Dr. Olga S. Hansen, Minneapolis; Dr. H. Z. Giffin, Rochester; Dr. Frederick Mitchell, St. Paul; Dr. Henry L. Ulrich, Minneapolis.

Adjournment at 12:15 P. M.

GENERAL SESSION THURSDAY AFTERNOON, OCTOBER 9th

The convention met in general session in the Sherman Theatre at 2:00 P. M., Thursday, with Dr. A. C. Strachauer in the chair.

The program consisted of a symposium of papers on "Cancer" and was introduced by Dr. Margaret Warwick, St. Paul, with an illustrated talk on "Carcinomata as Shown by Paper Models Reconstructed from Serial Section."

Dr. Harold Robertson, Rochester, presented a paper entitled "Some Unusual Features of Carcinoma."

THE CHAIRMAN (Dr. Strachauer): We will now turn to the next paper. Dr. Ritchie for a number of recent years has been coming to our attention, particularly interesting himself in the service on malignancy at the University Hospital, and he has done a splendid outstanding piece of work. Individuals that have come to us regularly and whom we have had to inform that their cases were hopeless and there was nothing that we could do for them and whom we have had to send back home, ever since the doors of that hospital were opened, have sought his help. They have been people who were in a perfectly dreadful condition so far as they were concerned—not caring to live for themselves, let alone living with their families—and Dr. Ritchie has included these people in his series of cases, and we are fortunate in having a little glimpse into some of the work he is carrying on and that is being carried on under Dr. Ritchie in the consideration of destructive and constructive surgery in malignancy. Dr. Ritchie.

Dr. Harry P. Ritchie then presented his paper entitled "The Destructive and Constructive Surgery of Malignancy."

THE CHAIRMAN (Dr. Strachauer): The relative merits of radiolitic and surgical treatment of malignancy are so frequently presented by individuals who are working exclusively in one field or another, and in their great enthusiasm over their work in hand in my opinion overstate it, it is a great pleasure to have an authority like Dr. Mayo, who is so thoroughly familiar with the results being obtained, both in the radiolitic and the surgical therapy, and the results obtained in the combination of these methods, to

present us with the facts on this subject. I will now call upon Dr. W. J. Mayo to address us on the subject of "The Relative Value of Surgery and Radiotherapy."

Dr. Mayo's address was then delivered.

THE CHAIRMAN (Dr. Strachauer): Ladies and gentlemen, the next and last speaker is a member of the University Hospital also. He is pathologist of the University Hospital, thoroughly alive to malignant problems, and for the last half dozen years—possibly less—has given a considerable number of lectures before lay audiences as well as medical audiences. In addition to that he has put on several health shows, both for the University and for the Hennepin County Medical Society, also showing at the State Fair. So you see he has been on the firing line and is particularly qualified to present the subject of what the laity should know about cancer, and this audience knows that that is a subject that we are all interested in, and I want at the end of his presentation that you should feel at liberty to discuss it with Dr. O'Brien.

Dr. William A. O'Brien, Minneapolis, had chosen as his subject, "What the Laity Should Know About Cancer."

The meeting then adjourned.

MINUTES OF THE SURGICAL SECTION

A. C. Strachauer, M.D., Chairman.

Verne C. Hunt, M.D., Secretary.

FRIDAY MORNING, OCTOBER 10th

The second session of the Surgical Section was called to order by the Chairman in the Sherman Theatre at 8:50 A. M.

Dr. W. L. Burnap, Fergus Falls, presented a paper on "The Silent Antrum," which was discussed by Drs. Horace Newhart, Minneapolis; J. T. Schlesselman, Mankato; W. E. Camp, Minneapolis.

Dr. Emil C. Robitshek, Minneapolis, read an essay entitled: "Surgical Accidents in Simple Inguinal Hernioplasty," which was discussed by Drs. G. G. Eitel, Minneapolis; Gustav Schwyzer, Minneapolis; A. R. Colvin, St. Paul; and Arthur N. Collins.

Dr. M. S. Henderson, Rochester, read an essay entitled: "Arthroplasties," which was discussed by Dr. Emil S. Geist, Minneapolis, and Dr. A. R. Colvin, St. Paul, and in closing by the essayist.

Dr. Emil F. Geist, Minneapolis, presented a paper on "Fractures of the Spine." In the discussion the following participated: Drs. M. S. Henderson, Rochester; A. T. Mann, Minneapolis; B. S. Adams, Hibbing; A. R. Colvin, St. Paul; and Dr. Geist in closing.

Dr. D. C. Balfour, Rochester, read a paper on "Relative Merits of the Different Surgical Procedures for Duodenal Ulcer," which was discussed by Drs. A. C. Strachauer, Minneapolis; A. T. Mann, Minneapolis; T. L. Chapman, Duluth; S. Marx White, Minneapolis; C. M. Roan, Minneapolis; and in closing by Dr. Balfour.

A joint paper by Dr. Arthur N. Collins and Fred Ritz, Bacteriologist, Duluth, on "Tracing Infections in a Surgical Service," was read by Dr. Collins. Dr. Wm. C. Carroll, St. Paul, and Dr. Theodore Sweetser, Minneapolis, discussed the paper, after which Dr. Collins concluded.

Dr. C. Alexander Hellwig, Frankfort-am-Main, Germany (in St. Cloud temporarily), presented a paper entitled: "Anesthesia in Goiter Operations at the Schmieden Clinic."

The Surgical Section then adjourned at 12:30.

MEDICAL SECTION

FRIDAY MORNING, OCTOBER 10th

E. L. Tuohy, M.D., Chairman

Chas. N. Hensel, M.D., Secretary

THE CHAIRMAN (Dr. Tuohy): The first paper this morning is by Dr. T. B. Tuttle, of the Veterans' Bureau, on the subject of Amebiasis. This is a very splendid contribution to this section and I would suggest that in discussing this you will remember that the benefit to be derived from this paper must be twofold. It must be not only what is communicated to you men who are here today, but the discussion should be in such form that the reporter may take it down in order that it may be published. There are many points of very great practical interest here, because most of us have not had our attention drawn to this matter and do not make proper stool examinations—do not attempt to properly differentiate the symptoms the patient has—and there is much obscurity as to treatment. Therefore, in opening the discussion, if you will have this point in mind we will be able to have a very good report of the benefits to be derived from this paper. I will call upon Dr. Tuttle.

Dr. Tuttle's paper entitled "Amebiasis" was discussed by Dr. Oriana McDaniel, Minneapolis; Dr. L. W. Pollock, Rochester; Dr. S. Marx White, Minneapolis; Dr. Moses Barron, Minneapolis; and in closing by the essayist.

DR. TUOHY (Chairman): Those who discuss the papers read here will get back a transcript of what they are presumed to have said. I noticed when Dr. Pollock was talking his words did not come over here very good. Let me urge you to do this when your reports come back; make an effort to bring into the report of the paper that which is actually occurring here.

I must tell you of a reporter who once reported a public man of very great prominence, whose words had great effect on the community as a whole. The reporter late in the evening, after a pre-Volstead bibulous dinner, awakened this chap, and indeed it was very early in the morning, and said:

"Perhaps you would like to have me read to you the report I made of your speech, because this is going forth and I thought it might be a courtesy to you to see it," and the man got out of bed and began to read what he had said, and he said:

"My God, man! This is awful. This is what I said," and he forthwith put down a very stirring and lucid statement, and as the reporter left the room he said: "Young man, I want to give you some advice. Never presume as long as you live to report a public man when you are drunk." This does not apply to our reporter that is here today. This is for the edification of those who wish to have a correct report go forth of what is being reported from this meeting. We have splendid discussions, but they don't always come back in good shape from the wash.

We will next listen to a paper by Dr. H. Z. Giffin, of Rochester, on the subject of "Hemorrhagic Pupura."

Those who discussed Dr. Giffin's paper were Dr. S. Marx White, Minneapolis; Dr. J. P. Schneider, Minneapolis; Dr. T. H. Sweetser, Minneapolis; Dr. Moses Barron, Minneapolis; and in closing by Dr. Giffin.

Dr. Ball read an essay entitled "Some Observations Concerning Tic Douloureux After Sixteen Years' Experience," which was discussed by Dr. A. S. Hamilton, Minneapolis;

Dr. J. C. Michael, Minneapolis; Dr. J. P. Schneider, Minneapolis; and in closing by the essayist.

Dr. W. H. Hengstler, St. Paul, presented a paper on the subject of "The Role of Infections in Nervous Disease," which was discussed by Dr. Henry W. Woltmann, Rochester; Dr. A. S. Hamilton, Minneapolis; Dr. Hengstler, in closing.

Dr. A. E. Flagstad, St. Paul, presented a paper entitled "Diathermy in Vascular Circulatory Disturbances and Arthritis." This paper was discussed by Dr. P. G. Boman, Duluth; Dr. G. S. Wattam, Warren; Dr. A. U. Desjardins, Rochester; Dr. J. C. Boehm, St. Cloud.

Dr. Paul O'Leary, Rochester, presented a paper entitled "Cutaneous Picture of Late Syphilis," which was discussed by Dr. S. Sweitzer, Minneapolis, and Dr. J. C. Michael, Minneapolis.

Dr. TUOHY (Chairman): Two men on the program do not get a fair deal; those who give the first papers in the medical and surgical sections, and particularly those men on the last part of the program, and so upon an occasion like this the whole-hearted sympathy goes forth to Dr. Barron, who gives his time to the preparation of a paper of this kind and comes into the meeting at the close. I take full credit for being responsible, but as we go over the morning session it seems a crime to stop these discussions, and no man is better fitted to accept this position on the program and maintain his dignity than Dr. Barron. We will call on him to come forth and make it snappy.

Dr. Moses Barron, Minneapolis, presented his paper entitled "Diseases of the Pancreas."

Dr. HEAD: Mr. Chairman, while I have many notes of interest and importance that I might bring forward, I will resign my time in this discussion to some of the other men who have something interesting to discuss.

Dr. TUOHY (Chairman): Will you submit the discussion in writing and send it in?

Dr. HEAD (Minneapolis): I will be glad to.

Dr. CROSS (Minneapolis): It is late, Mr. Chairman. I think it is very unfortunate. We will, of course, write a discussion later. If there was time I would like to detail some cases, but I think I will forego that and write my discussion also. It is so late, and we all want to get away.

Dr. TUOHY (Chairman): Will you write them out? I think that is the better suggestion. You are all uneasy. Let the gentlemen write them out and let them be incorporated in the publication.

I thank you for your patience in remaining. We are all off to luncheon, and then for the General Session at two o'clock.

The section adjourned.

GENERAL SESSION FRIDAY AFTERNOON, OCTOBER 10th

The convention met in general session in the Sherman Theatre at 2:25 p. m., Friday, with Dr. H. M. Workman in the chair.

THE CHAIRMAN: This is the first time in my experience of forty years that the President of the Minnesota State Medical Association has not been able to be present to preside at the convention. The job has been passed on in the manner of "Let George do it," so it has been up to the President of the Council to open this session. I will therefore

called on Dr. Drake to read the Report of the House of Delegates.

THE SECRETARY: At the request of the President, Dr. Archibald MacLaren, who was unable to be here, I will read the following communication which was sent to the Association:

"It is with feelings of the deepest regret that I find it will be impossible for me to attend the meeting of the Minnesota State Medical Association at St. Cloud. Never having suffered from a severe illness before, it has seemed, from week to week, that I would surely be able to be with you at this time. In this hope, however, I am doomed to disappointment in spite of the excellent care given me by my skillful medical advisors. They assure me that before long I shall be out again and then it will be with the most heartfelt pleasure that I shall greet my old friends again. I wish to express at this time, my keenest interest in the meeting and to send to you my best wishes for its great success.

DR. ARCHIBALD MACLAREN."

The registration up to the present time is 295 out of a total membership of 1,952. This 1,952 represents a gain in membership during the past year of 68. The financial status of the Association is somewhat better than it was a year ago, the Treasurer's report showing a net gain of about \$500.

The House of Delegates met twice and the Council twice, and the following is in brief what was accomplished.

The House of Delegates recommended to the Program Committee that the next program embody more general meetings and fewer sectional meetings, and that the papers be read largely in abstract rather than have the entire paper presented, the idea being that the full paper should be published. The House of Delegates endorsed the Northwestern Health Journal, a periodical which, as you know, is for the laity.

At the request of the House of Delegates, the Council combined three committees; that is, the Cancer Committee, the Publicity Committee, and the Public Health Committee are to be amalgamated into a Public Health Committee. The question of the discontinuance of the medical defense feature of our constitution was brought up and will be voted upon at the next meeting, a year from now.

At the election of officers yesterday morning the following were elected for the calendar year 1925: President, Dr. W. L. Burnap, of Fergus Falls; First Vice President, Dr. A. S. Hamilton, of Minneapolis; Second Vice President, Dr. John Libert, of St. Cloud; Third Vice President, Dr. C. W. Moore, of Eveleth. The present Secretary and Treasurer were continued. The Councillors: First District, Dr. G. S. Wattam, of Warren; Third District, Dr. H. L. Taylor, of St. Paul; Fourth District, Dr. W. H. Condit, of Minneapolis, to succeed himself; Seventh District, Dr. F. A. Dodge, of LeSueur, to succeed himself. The Delegates to the American Medical Association: Dr. Rothrock was elected for two years, and Dr. Chapman, of Duluth, for two years. Dr. Litzenberg is the third Delegate, and he continues for another year. As Alternates: Dr. Cross, of Minneapolis, was elected for two years and Dr. Theodore Bratrud, of Warren, for two years. It was decided to hold the next meeting in Minneapolis, and tentatively the time of meeting was set by the Council as the second week of October, 1925.

THE CHAIRMAN: Is there anything further to come before this assembly? The committee appointed yesterday to present the president-elect, Dr. Wattam and Dr. Head, will present the president.

DR. WATTAM: Mr. President and Members of the Minnesota Medical Association: I have great pleasure in presenting to you Dr. W. L. Burnap, of Fergus Falls, who has been duly elected as your President and executive officer for the coming year. In selecting Dr. Burnap as your President I feel that you have done a great honor at this time to the medical profession of northwest Minnesota, and we who have known Dr. Burnap and known of the work that he has done for this Association, especially northern Minnesota, feel that you have as well honored this Association by the selection that was made by the House of Delegates yesterday. I have pleasure in presenting Dr. Burnap.

THE PRESIDENT (Dr. W. L. Burnap): Members of the Minnesota State Medical Association, Friends, Mr. Chairman: You little know the embarrassment which I feel in standing before this gathering of men, most of whom are so much more capable and worthy than I of accepting this high honor and the responsibilities of this office. It has come so unexpectedly and with at the present time such a heavy weight that I feel it impossible just now to say anything which would be of special interest or delight to you. I could not if I should try convey to you my feelings of pride and heartfelt gratification that these splendid men of northern Minnesota saw fit to present me as their representative in this Association. I will say nothing of this fine gentleman who, as I understand, made the nominating speech. I don't like to suggest that possibly it was not entirely unselfish because he grabbed off my position of councilor as soon as I was out of the way. Nevertheless, northern Minnesota has handed this Association a package which I am sure most of you will feel is of doubtful value.

We are proud of the profession of northern Minnesota. We are proud of the advances it has made, especially during the last few years. We are proud of Duluth, our metropolis and our chief medical center. But I am glad to say that our interest does not cease there. We are proud of our University; we are proud especially of its medical department. We are proud of the accomplishments of its undergraduate and postgraduate departments; and we glory in its promise of a brilliant future. We are proud of the high character and great attainments of the profession of the Twin Cities, and I wish again at this time to extend to them our thanks for their many courtesies. We are proud and truly grateful that fate gave to Minnesota the two Mayos and permitted them to gather at Rochester the greatest group of medical authorities and specialists this world has ever known.

And so, feeling as we do, we of northern Minnesota are especially pleased that you have given us an opportunity for one year to serve the entire profession of this great state of Minnesota; and whatever the accomplishments of this year may be, the Minnesota State Medical Association can rest assured that we will have given it the best that we have to give.

Now, recognizing a simple proposition in physics, that an engine that uses all its steam in whistling has no power with which to turn the wheels, I will cut off the exhaust and proceed to work.

DR. E. L. TUOHY (as Chairman): The combined session will proceed with the program. We have the very good fortune to have with us as a guest from the Department of Zoology of the University of Chicago, Dr. Carl R. Moore. I take great pleasure in introducing Dr. Moore at this time.

Dr. Carl R. Moore, Chicago, read a paper entitled: "The Behavior of the Testes Under Varying Experimental Conditions and the Function of the Scrotum; Transplantation Cryptorchidism and Vasectomy." Dr. F. C. Rodda, Minneapolis, and Dr. C. N. Hensel, St. Paul, commented on the paper.

THE CHAIRMAN: It is my pleasant opportunity to thank the Local Committee on behalf of this Association and to express to them our very great appreciation, first for the invitation here to St. Cloud, second for the masterly way in which they have arranged their committees and have carried on this meeting, and then for the very fine comfort that we have had both as to the place of meeting and the excellent hotel accommodations, and further for the very kindly, cordial and fraternal relationship that the medical men have extended to us, and most of all the extremely cordial reception that we had from their wives and friends at the entertainment of last night. We will all go home feeling that St. Cloud is one of our very notable Minnesota centers and that we will hope to come back again. I am not sure what the precedent is on an occasion like this, but I believe a motion to carry such a resolution would be in order.

DR. J. G. CROSS: I move that the assembly by a rising vote attempt in that way to thank the profession of St. Cloud for their entertainment of this year.

(Motion seconded and carried.)

Dr. Lawson G. Lowrey, Minneapolis, read a paper on "Child Guidance."

Dr. O. W. Rowe, Duluth, presented a paper on "Routine Examination of the New Born," which was discussed by Drs. F. C. Rodda, Minneapolis; W. R. Ramsey, St. Paul; August Kuhlmann, Melrose; and in closing by Dr. Rowe.

Dr. Albert G. Schulze, St. Paul, read a paper entitled: "Differential Diagnosis of the Preeclamptic Toxemias and Nephritic Toxemias of Pregnancy," which Dr. W. A. Coventry, Duluth, discussed.

Dr. Henry Wireman Cook, Minneapolis, presented his paper on "Periodic Physical Examinations" very briefly, the hour being late.

THE CHAIRMAN: I feel that this subject that Dr. Cook has brought before you briefly today without sufficient audience is of great importance, and I hope that with the publication of this paper interest will be awakened and a greater opportunity for the presentation of this subject before a larger audience will be had next year. I feel that those of you who have had the courage to stay through this program and thus show your interest should have the appreciation of the chairman of this section, and that those of the essayists who had to stay and bear the brunt of the dwindling audience likewise owe the appreciation of the chairman.

This concludes the afternoon's program. The health movie has not arrived. With your permission the annual meeting of the Minnesota State Medical Association stands adjourned.

Adjournment.

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